Public Engagement Innovations
for Horizon 2020

PE2020

Public Engagement Innovations
– Catalogue of PE initiatives, D.1.2

The PE2020 Project

Project consortium:

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The PE2020 project

PE2020 will identify, analyse and refine innovative public engagement (PE) tools and instruments for dynamic governance in the field of Science in Society (SiS). PE2020 analyses the PE tools and instruments through a systemic and contextual perspective, and contributes to the potential and transferability of new governance innovations. PE2020 will create new knowledge of the status quo and trends in the field of public engagement in science, refine innovative PE tools and instruments and propose new ones.

The project will do this by (1) further developing a conceptual model that provides a systemic perspective of the dynamics of public and stakeholder engagement; (2) creating an updated inventory of current and prospective European PE innovations; (3) context-tailoring and piloting best practice PE processes related to the grand challenges of the Horizon 2020 and (4) developing an accessible net-based PE design toolkit that helps identify, evaluate and successfully transfer innovative PE practices among European countries.

New tools and instruments for public and societal engagement are necessary to boost the quality, capacity and legitimacy of European STI governance and to solve the looming problems related to the grand societal challenges of the Horizon 2020. In order to ensure practical relevance, the project will work through intensive co-operation between researchers and science policy actors. PE2020 will expand the capacity of European and national science policy actors to integrate better societal engagement by providing an easy access to new PE tools and instruments, to be included in the requirements and implementation of research in Horizon 2020 and beyond.

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Content

Introduction

During the last decades, the multifaceted field of public engagement (PE) with science and technology has witnessed and responded to a greater societal and academic attention. It is increasingly acknowledged that existing and emerging societal challenges as well as scientific and technological advances call for new initiatives, platforms and opportunities for engaging the public in non-traditional ways. Ever more, new formats take into consideration elements such as early citizen involvement in research and innovation processes, mechanisms fostering deliberation and co-governance as well as other participatory and democratic practises. Accordingly, attention has been focused on the different rationales for involvement (whether these are idealistic, democratic, instrumental and normative etc.) and the benefits and possible impacts of participation have been critically reviewed in an attempt to bridge the 'gap between theory and practise' (Bucchi and Neresini 2007; Burchell et al. 2009; Delgado et al. 2011:826; Marris & Rose 2010).

Such transformations within the field of PE is generally described as a turn from 'understanding' to 'engagement' which includes a move from a one-way and top-down model of communication towards an increased focus on 'new' dialogue-based approaches that entails deliberation processes (e.g. mechanisms such as citizens juries, consensus conferences, deliberative polls, among others, taken together under the term 'mini-publics' (Abelson et al. 2003; Burchell et al. 2009; Goodin and Dryzek 2006; Stilgoe et al. 2014). The greater focus on the benefits of including different societal actors in research and innovation processes in non-traditional and democratic ways has consequently brought forth new endeavours of engaging the public and helped reinvigorate the field at large. New democratic innovations and PE formats for including societal stakeholders have been developed, put into practice as well as formalized in different national and institutional contexts.

Although public engagement activities have generated increased attention in general, not least with the fairly recent promotion of 'responsible research and innovation' (RRI) by the European Commission, which aims to "engage society more broadly in its research and innovation activities" (ec.europa.eu), there are enduring and forthcoming challenges of reinforcing inclusive and deliberative PE performances. 'Deficit-like assumptions' still mark dialogue (Stilgoe et al. 2014:5), in many cases, the assessments and evaluations of possible impacts remain unexplored and unaccounted for (Burchell et al. 2009; Rowe and Frewer 2005) and the prospects for developing alternative models of scientific governance in terms of 'a culture of experimentation' have not yet been exhausted (Irwin 2014:74). Furthermore, SiS practitioners and experts within the field point to public engagement activities as often being outdated, discouraging and performed as a 'tick-box exercise' rather than being an integrated part of public services (Andersson 2014:2).

Exploring the catalogue of public engagement innovations

The up-to-date inventory of 250 prospective European public engagement innovations presented in the previous report D.1.1, which encompasses 76 mechanisms and 250 initiatives, reflect the commitment to actively engage citizens and go beyond mere 'tokenistic' and 'downstream' exercises (Arnstein 1969; Wilsdon and Willis 2004). The catalogue at hand sets out to explore some of these innovative and cutting edge practices in depth and across different engagement categories and objectives to explore the breath of PE formats and their different relations to the Horizon 2020 societal challenges.

lenges. The main purpose of the catalogue is to further explore and understand innovative PE practices, and provide a platform for international inspiration and learning within a PE setting constantly in a state of flux. The intention is that the catalogue of 38 case descriptions collectively will provide a rich picture of innovative mechanisms and initiatives in Europe and beyond. Within the scope of the PE2020 project at large, the catalogue also serves as a foundation for further conceptual analysis in terms of PE performances as well as for a pilot selection and toolkit construction in subsequent work packages.

The catalogue presents detailed case descriptions and reflections provided by individual case coordinators with particular expertise with the initiative in question. The approach of including expert descriptions allows for in-depth and first-hand reflections, experiences and information at a level of detail, which would have been difficult to access otherwise.

Each coordinator have completed an open-ended survey exploring key features of the initiative, including the innovative dimensions of the particular PE case; outcomes and impacts; case relations to policy decision-making processes; the advantages and challenges associated with the case and according to the Horizon 2020 societal challenges. The common survey structure allows for horizontal comparisons of PE innovations while the open and qualitative approach simultaneously enables a more inductive and nuanced examination of the concept and features of innovative practices.

The question of how we are to understand the concept of innovation in the context of public engagement remains a salient issue in the project. As a preliminary definition, we broadly understand innovation "as novel combinations of knowledge, practices and resources…" (Rask et al. 2012:711). Furthermore, as a basis for selecting the case studies included in this catalogue, a nomination procedure was implemented, in which six pre-constructed criteria of innovativeness were applied for process and case qualification.

The main criteria for selection are:

Hybrid combinations:
- Does the initiative combine mechanisms in new ways?
- Does the initiative include new hybrid ways and arenas for bringing policy makers into discussions between researchers (science) and the public (society)?

Methodological novelty:
- Have new dialogue-based approaches to engagement been applied? (Is deliberation possible among participants and/or between participants and decision-makers?)
- What is the extent of participant empowerment and governance contribution? – What are citizens' opportunities to set the agenda and articulate preferences, for being informed, taking part in conflict resolution or knowledge co-production and for influencing final decisions? (Smith 2005:7; Participedia.net)

Inclusive new ways of representation:
- Is the initiative (and the mechanisms applied) inclusive in terms of selection methods? (Open to all or is the selection characterized by election, random selection, self-selection or appointment? (Smith 2005:7))
- Have new combinations of actors been introduced in the PE initiative?

Potential impact:
- To what extent can the initiative potentially bring about change? – According to the objectives stated and/or according to unintended impacts?
- Does the initiative seem potentially influential on political decision-making processes?
- Does the initiative seem potentially influential on political, media or learning outcomes?
- To what extent does the initiative seem to impact on public debate? (Beetham 2012:59)
- To what extent does the initiative seem to have an impact on the participants? (Beetham 2012:59).

Bearing on societal challenges:

- To what extent is the initiative oriented towards the societal challenges specified under Horizon 2020?

  Societal challenges: 1) Health, demographic change and wellbeing 2) Food security, sustainable agriculture and forestry, marine and maritime and inland water research, and the Bioeconomy 3) Secure, clean and efficient energy 4) Smart, green and integrated transport 5)Climate action, environment, resource efficiency and raw materials 6)Europe in a changing world – inclusive, innovative and reflective societies 7) Secure societies – protecting freedom and security of Europe and its citizens (ec.europa.eu).

Feasibility:

- To what extent can the initiative be effectively transferred to other (national) contexts and pilot tested within limited amounts of resources (financial, administrative etc.)?

The PE2020 project is specifically tailored to explore PE in the context of Horizon 2020, and it is furthermore an objective to pilot a number of PE initiatives. The last two sets of criteria reflect these internal considerations. The criteria put forth are based on prior theoretical and empirical knowledge of the field, and in agreement with the explorative approach, they remain fairly open, inclusive and broad in order to reach a more comprehensive assessment of innovativeness and to deepen and complement our evolving understanding of the notion of innovativeness in public engagement.

Strategy for selecting innovative PE cases and administration of survey

To ensure a valid and quality controlled selection of the particular innovative cases, a selection strategy entailing a two-step procedure for the selection was implemented:

Information accessibility

The inventory emerging from Deliverable 1.1 was reduced according to threshold criteria: Is the initiative properly described? Can more information be obtained? Is the initiative primarily addressing STI matters? If these answers could be negatively replied, the initiative was excluded from nomination.

Novelty of PE initiatives

The nomination procedure included the full consortium and the international advisory board (10 nominators in total). Each nominator was invited to select and rank 10 innovative initiatives each using a specific tailored template. Nominations were to take into account the six sets of criteria of innovativeness described above, and nominators were requested to qualify each nominated initiative by providing a reflection on the initiative on the backdrop of the selection criteria. If supplementary criteria were used for nomination, each nominator was kindly asked to state these as well.

On the basis of this process, a total of 62 nominations were obtained. Subsequently, case coordinators were identified as informants for the survey. Based on a common contact-protocol, each consortium partner personally contacted a number of case coordinators with information on the project and the objectives of the survey. Upon these personal contacts between the consortium partners and the informants, 56 questionnaires were dispatched in three instances. In the first instance, 29 respondents received the survey, in the second the survey was submitted to 11 respondents and in the third instance, the survey were sent to 16 respondents, which in this case included respondents both with and without confirmed contact information. Following a procedure of reminders and follow-up contacts with targeted informants, a total of 38 case descriptions have been collected.

For a simplified overview, the data collection process is visualized in figure 1. below. Subsequent to phase 3 of compiling the first version of the catalogue, all case coordinators have received the catalogue for individual quality check and possible additions etc. to enhance and homogenize case descriptions with regard to structure, clarifications and amplifications etc.

Figure 1. Process of data collection
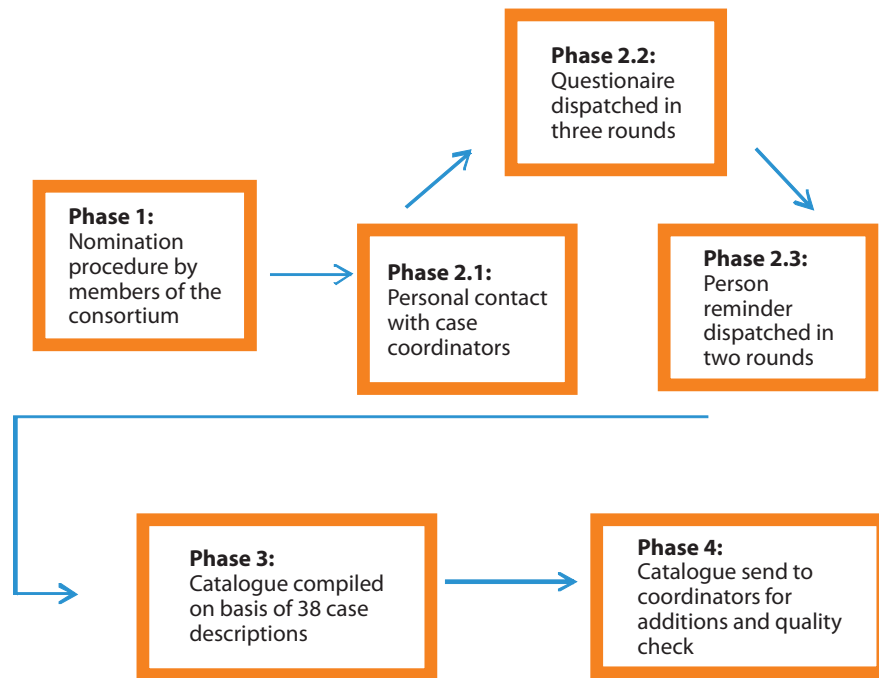
Catalogue design

The innovative cases included in the catalogue are structured according to five main categories which serve as a heuristic to classify PE mechanisms and initiatives by 1) their aim / objective and 2) the direction of the flow of information. Furthermore, the categories tap into the distinction between horizontal (culture-oriented activities) and vertical (policy-oriented) engagement. These five categories (see below) have been constructed and refined through a stepwise and iterative coding process informed by dominating conceptual models for categorizing PE activities, as well as they are empirically driven and funded by the inventorying of 250 specific engagement initiatives across Europe and beyond (see report D.1.1 for a specified description of the pre-categorization model). Clearly such classificatory schemes also involve a certain degree of violation of the subtler nuances of the individual cases, and we are well aware that the field of public engagement can be captured by other analytical lenses and likewise be categorized according to other typologies. Still, with the objective to allow for a comparison of similarities and differences among PE mechanisms while at the same time also be inclusive enough to encompass hybrid forms of PE innovations, the classification scheme is considered to be a useful platform for partly capturing the variation and level of complexity characterising this multifaceted field of public engagement.

Each description furthermore includes different background information for each initiative such as author, time span, location etc. as well as each case is tagged by several main public engagement features/characteristics intended for easy case orientation. The catalogue is designed as an interactive pdf file, for which the main PE features function as search categories allowing for easy navigation among similar initiatives, mechanisms, geographical scales, target groups, among others. Moreover, each case provides additional references to similar initiatives, many of which can to be found in the main inventory (D.1.1) for further inspiration. In addition to specific background information, each case is classified according to the following main categories:

Table 1. Categorization of PE mechanisms/initiatives

Public communication – *the aim is to inform and/or educate citizens*. The flow of information constitutes one-way communication from sponsors to public representatives, and no specific mechanisms exist to handle public feedback (examples include public hearings, public meetings and awareness raising activities).

Public activism – *the aim is to inform decision-makers and create awareness in order to influence decision-making processes.* The information flow is conveyed in one-way communication from citizens to sponsors but not on the initiative of the sponsors as characterizes the 'public consultation' category (examples include demonstrations and protests).

Public consultation – *the aim is to inform decision-makers of public opinions on certain topics.* These opinions are sought from the sponsors of the PE initiative and no prescribed dialogue is implemented. Thus, in this case, the one-way communication is conveyed from citizens to sponsors (examples include citizens' panels, planning for real and focus groups).

Public deliberation – *the aim is to facilitate group deliberation on policy issues of where the outcome may impact decision-making.* Information is exchanged between sponsors and public representatives and a certain degree of dialogue is facilitated. The flow of information constitutes two-way communication (examples include 'mini publics' such as consensus conferences, citizen juries, deliberative opinion polling).

Public participation – *the aim is to assign partly or full decision-making-power to citizens on policy issues.* Information is exchanged between sponsors and public representatives and a certain degree of dialogue is facilitated. The flow of information constitutes two-way communication (examples include co-governance and direct democracy mechanisms such as participatory budgeting, youth councils and binding referendums)

PE category: Public communication, Public activism, Public consultation, Public deliberation, public participation

Mechanism: Generic ways of enacting public engagement, e.g. consensus conference, participatory budgeting etc.

Main purpose of initiative: Awareness raising, education and capacity building, protest, community building, consultation, dialogue/deliberation, knowledge co-production; co-governance

Geographical scale: Global, European, National, Regional, Local/urban, and institutional

Organizing entity: National governmental body, local governmental body, academic institution, NGO, community based organisation, non-profit organisation, science museum/centre, industry and business

Target groups: Lay publics, researchers, stakeholder organisations/groups, experts, public officials

H2020 Societal Grand Challenge(s): Health, demographic change and wellbeing; Food security, sustainable agriculture and forestry, marine and maritime and inland water research, and the Bioeconomy; Secure, clean and efficient energy; Smart, green and integrated transport; Climate action, environment, resource efficiency and raw materials; Europe in a changing world – inclusive, innovative and reflective societies; Secure societies – protecting freedom and security of Europe and its citizens

It has been stressed that 'innovations are more than ideas and theories; they are ideas in action' and that 'good innovations depend on ideas that can be implemented successfully' (Newton 2012:5). The initiatives included in the catalogue cover a wide field; from small scale experiments to large scale innovations, from local settings to transnational co-operations, from grass-

root activities to national institutionalized mechanisms and from awareness raising activities to direct power sharing exercises, among others. Common to all of them is their successful implementation and achievements of objectives and actions stated.

We are well aware that we by no means have exhausted the pool of innovative cases in Europe and beyond, but we hope that the wide-ranging catalogue at hand will serve as a platform for international learning and inspiration in efforts to promote public engagement activities at large. We very much wish to thank all authors for their generous expert contributions to this catalogue.

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Participedia.net

Public Communication

PRIMAS
– Promoting inquiry in mathematics and science across Europe

The PRIMAS project aims to effect a change in the teaching and learning of mathematics and science at school through and by the implementation of inquiry-based learning approaches in mathematics and science education throughout Europe. The project's multi-level dissemination plan, its broad inclusion of various stakeholders to support and sustain the wider application of inquiry-based learning at a grassroots level and as well its particular focus on context, policies and effecting policy-making processes as well as strategic networking activities have been key elements for the success of the project.

Context

PRIMAS is an international project within the Seventh Framework Programme of the European Union and an initiative in the Science in Society Programme. The European-wide PRIMAS Consortium of higher education institutions worked together with teachers and a broad range of actors and stakeholders in education. A multi-level and multi-stakeholder implementation and dissemination plan was carried out: it supported the establishment of information, materials, competences, communities and networks that foster a change of mathematics and science classrooms towards more strongly including inquiry-based pedagogies and eventually towards raising young people's interest in mathematics and science and related careers.

Background information

Name: PRIMAS – Promoting inquiry in mathematics and science education across Europe

Coordinator: University of Education Freiburg, Germany

When: January 2010 – December 2013

Where: Europe

Who: Prof. Dr. Katja Maaß (Project Coordinator) & Mag. Diana Wernisch (Project Manager), University of Education Freiburg, Germany

Additional information: www.primas-project.eu

Initiative characteristics

PE category: Public Communication

Mechanism: Awareness raising activities, national and European consultancy panels, dissemination networks

Main purpose of initiative: Awareness raising, education and capacity building

Geographical scale: 12 European countries

Organizing entity: Academic institution

Target groups: Youth, stakeholder groups and public officials in maths and science education

H2020 Societal Grand Challenge(s):

- Europe in a changing world – inclusive, innovative and reflective societies

Aims and mechanisms

Across Europe there are calls to attract more students to mathematics and science: As the rate of development of technology increases, we also need to provide adequately prepared citizens who are equipped with knowledge and skills that allow them to be responsible and productive members of society today – and in the future. The PRIMAS partners have a vision of young people with curious and inquiring minds, who are intrinsically eager to extend their knowledge of mathematics and science and who are able to take their role in our modern, knowledge-intensive and technology-driven world. In achieving this vision, the choice and use of innovative and purposeful teaching and learning pedagogies – such as inquiry-based learning (IBL) – in schools is decisive. IBL pedagogies of high quality can raise school students' intrinsic interest in mathematics and science and support attaining important competences essential for their futures as world citizens. These include self-directed learning, exploring new knowledge areas and obtaining problem-solving skills (see the project website for more details). Therefore, the PRIMAS overarching objective was to promote a more widespread uptake of IBL in mathematics and science education at both primary and secondary school levels in Europe. To help achieve this objective, PRIMAS initiated a wide range of dissemination actions addressed to key target groups and placed special emphasis on professional development interventions related to IBL in mathematics and science. The project brought together 13 teams of experts in IBL in mathematics and science education from 12 nations and was led by a team of academics and management and dissemination professionals at the University of Education Freiburg.

The project was designed to ensure maximum impact by using a multi-level dissemination plan addressed to teachers and other important stakeholders (parents, educational authorities, policy level). This plan included: providing best possible support and training of teachers and teacher trainers; creating and selecting high-quality, multi-lingual materials for working with teachers (including classroom materials for teachers to work with students); supporting dissemination actions addressed to teachers to 'advertise' IBL; methods of working with out-of-school actors, such as local education authorities and as well parents (e.g. in advisory panels, special events); and summaries of analyses and events that informed policy makers about how they can support the required changes.

During the duration of the PRIMAS funding period (2010–2013), the project partners educated over 350 multipliers, around 2800 in-service teachers and more than 4200 pre-service teachers. PRIMAS partners organized over 365 dissemination activities with more than 26000 face-to-face contacts and a much larger number of indirect contacts, such as those using the online published materials as promoted for example through the establishment of an international newsletter.

In the dissemination among teachers one of the most important mechanisms was the 'use' of so-called multipliers who were educated to become facilitators, supporting other teachers in integrating inquiry-based pedagogies into their teaching. The university teams of experts, multipliers and teachers maintained close contact with each other which supported building sustainable communities in which professional development activities can be carried out. To maximize project 'reach' to teachers, professional development (PD) networks of teachers were expanded and new ones built by using proven and efficient models.

Throughout the project, National Consultancy Panels and two international panels provided ongoing advice and orientation at key stages. The formation of these National and European Consultancy Panels in which relevant stakeholders were represented was essential in supporting the project's progress and the eventual achievement of our aims.

Overall, core to the success of the project was the multi-level and multi-stakeholder approach to dissemination and implementation. Classroom changes need to be implemented within specific curricula, regulations, policies, etc. PRIMAS, therefore, from the outset addressed and actively involved those stakeholders at different levels who are most relevant to supporting the broader changes as envisaged by the project.

As implied by research (such as diffusion theory, participatory approaches, communication theory), different formats of activities and events were used to reach, inform and engage different groups of stakeholders.

The PRIMAS Consortium has gained extensive experiences throughout the project and published its insights in a range of reports and guides (see also further below), which are publicly available on the website.

Results

The PRIMAS project was highly successful in supporting to effect a change in mathematics and science teaching and learning across Europe. The project has been identified as a 'success story' among Science in Society projects by the European Commission, based on its merit of an extensive impact across Europe. The impact has also been evidenced by formative and summative evaluation carried out by both an internal team and an outside agency.

Central to the success of the PRIMAS initiatives at a national and international level has been the combination of an approach that provides (a) research-based materials and training for teachers and teacher educators being the central actors in education, as well as (b) information, community building/networking and dissemination activities directed to all core actors when it comes to improving education.

Accordingly, when the PRIMAS project ended in 2013 the Consortium had not only developed a high-quality, trialled and tested pool of classroom and professional development materials, which continue to be publicly available for free in several European languages (see project website, materials are also on the Scientix platform, see also PRIMAS YouTube-channel). By the project's end PRIMAS had also forged strong links and built communities nationally and internationally between teachers, teacher educators, schools, parents, researchers, education authorities and the policy level. By the end of 2013 PRIMAS had organized two policy-oriented events in Brussels (each attended by around 100 persons from across Europe) and built an international network linking approximately 400 stakeholders to improving mathematics and science education across Europe. The network for example received (and continues to receive) a regular newsletter on current developments, within and beyond the project PRIMAS. In 2015 it had grown to include approximately 1000 stakeholders across Europe.

Since the beginning of PRIMAS, the management team had focused on coordinating, quality-assuring and improving all project activities and outcomes. A particular focus was also placed upon the professional and strategic communication of the project objectives, its activities, insights and 'products' to our core stakeholders. Based on the work within each partner country, the Consortium very successfully engaged with the media and contributed to public discourses on a national and international level. This can be seen in the extensive media coverage that the project received, the awards that the project has won (for example the public voting Scientix award in 2014 for a Guide to support successful dissemination activities) and the partnerships and networks that have been established (e.g. partnerships with science museums, links with policy-making circles, for example through the inclusion of education authorities in the national advisory panels, national and international networks of stakeholders).

Core to the current and continued impact of the project is also that PRIMAS results and insights have been made publicly available on our website and that they were widely advertised across Europe (e.g. through a newsletter, through a YouTube-channel). PRIMAS has for example published guides and reports on (download at the project website where readers will also find a multi-lingual materials repository):

- Guide for professional development of teachers (supporting inquiry-based pedagogies)
- Guide for dissemination to teachers (using a hands-on approach with examples and case studies)
- Guide for dissemination to out-of-school target groups (using a hands-on approach with examples and case studies)
- Policy briefing report with recommendations and guidelines

Advantages

PRIMAS aimed to effect a change across Europe, i.e. at the local (national) level *and* at the international level. To effect such a change it has been essential to have (a) well-established expert teams in all PRIMAS partner countries carry-

ing out the initiative, (b) a professional management and communication team at the international level with strong organization and coordination skills and (c) a strong collaborative spirit within the Consortium and international meetings focused on discussing and elaborating concepts and activities within the project, mutual learning and exchange exercises.

A pre-condition to the success of PRIMAS was that a clear objective and dissemination plan existed to which Consortium partners committed and that the commitment of partners was driven by their genuine interest and desire to improve education in their role as researchers and educators in mathematics and science.

Having locally anchored teams helped the project to carry out its actions in specific settings, to shape actions according to the needs and requirements of the specific settings, and to reach impact on a local (national) scale. In these local settings, the international dimension of the project helped to convey the importance of the agenda pursued by the local teams. This helped in initially building local communities as well as in forming the National Consultancy Panels who acted as external experts as well as supporters in making project initiatives feasible and sustainable (e.g. through the accreditation of PRIMAS courses within national PD systems, through disseminating the project activities and messages in their areas of influence). These panels performed beyond an initially envisaged consulting role and were developed into collaborative entities for the work carried out in the local settings. The national panels proved to be essential in building up local working groups that had a scope clearly beyond the university expert teams involved directly in the Consortium.

A structure highly advantageous to the project's success was also that one member of each National Consultancy Panel acted on the so-called European Consultancy Panel who met with the international project Consortium at regular intervals. By using such a participatory approach we were able to create an additional link (beyond the expert teams of researchers and educators who formed the Consortium) between the local and the international activities and to create ownership of the project among the National Consultancy Panels.

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Vice-versa, the international dissemination activities (such as policy-oriented conferences, engaging in European-level discourses, etc.) profited from the strong anchor the project had in all partner countries. Our messages were not only based on experiences and the situation across Europe but our base also enabled us to involve stakeholders from across Europe in such European-level events.

A special feature of PRIMAS was also that phases of development in the Consortium iterated with phases of review, discussion and quality improvements and (intertwined with this) that phases of local implementa-

tion of different activities such as PD courses, dissemination activities or policy-oriented meetings varied with phases of international meetings. This integrated but decentralized model of implementation ensured the development and dissemination of concepts, models, information, materials and messages (in sum: project foreground) that were of the highest possible quality, that were trialled and tested in different contexts and that were based on and adaptable to different country and cultural contexts.

These and previously described features made the project able to achieve its objectives and reach a sustainable impact that extends far beyond the project duration.

Obstacles

PRIMAS operated according to a demanding implementation model: common concepts and models, based on a shared understanding, informed by and applicable to all country and cultural contexts, formed the basis for all dissemination activities at the local (national) and international level.

Most generally, this demanding implementation model required a professional management team to coordinate the Consortium activities. The organization of the project meetings were a particularly important vehicle to ensuring the elaboration of concepts and contexts, the discussion of different perspectives and the creation of shared understandings. The meetings were also an important vehicle to securing continued commitment among the Consortium partners. The Consortium was in regular contact during the phases of local implementation and development and virtual meetings were also held. Nevertheless, the approximately half-yearly face-to-face meetings proved invaluable in bringing forward the project as a whole, the Consortium and the external panels as a team.

The PRIMAS Consortium was established against a clear objective and a clear implementation model. Nevertheless, it was necessary in the first phases of the project to work towards the establishment of a common and deep understanding of the core concepts. This helped to subsequently 'go out' and engage with the public and more specifically with our target groups in a clear, coherent and convincing manner.

Another challenge in an international dissemination initiative is that project foreground needs to be developed taking account of very different country contexts and cultures. Although the broad context to fostering the uptake of inquiry-based pedagogies is similar across Europe, there are different specific situations in different countries to which a project needs to connect. And, target groups are also coined by specific cultures: for example, the understanding of the role of teachers varies across countries. Project 'templates' therefore needed to be precise and open to adaptation at the same time. Again, the face-to-face meetings were a valuable vehicle in consolidating concepts, approaches, etc. with the needs, experiences and specific contexts in the different countries. Openness across the Consortium to mutual learning and exchanges were also key in this process.

When broadly mobilizing stakeholders it has been essential that PRIMAS had operated on a research-based implementation model (research-based design of professional development and dissemination activities) and at the same time applied a hands-on practical approach to support communities, as well as that it worked in a participatory manner (most importantly through the structures of the National and European Consultancy Panels).

Innovative dimensions

One of the major innovative features of the PRIMAS project, i.e. researchers and educators from higher education institutions engaging with a broad range of stakeholders to effect changes in education of course provided for a challenging task in general. As outlined above, this challenging task was addressed by making use of sound and research-based concepts and models and by following a multi-level and multi-stakeholder approach to dissemination and implementation.

Although most of the expert teams from the universities had experiences in engaging with the public, the PRIMAS approach took their experiences to new levels. This included the communication and collaboration with very different target groups who require distinct styles of communication, who prefer different styles of working and who need different kind and types of information. The eagerness of each and every PRIMAS member to engage in

a professional learning exercise to support the implementation of the PRIMAS approach was necessary. The management team supported these processes, such as by making explicit the requirements, by providing space for discussion and by providing communication templates.

To reach the public and the PRIMAS target groups, our communication strategies used a broad range of media: a YouTube-channel was established, the international website (to which national websites are linked) is the central portal to the project. Text-based print and online media as well as face-to-face communication strategies were used (separately and in combination) to support the broadest possible dissemination.

Several mechanisms helped the project to effectively perform innovation management. Special sessions were included at Consortium meetings to promote mutual learning and exchange on topics that were identified as crucial for the project's progress by the management team, who consulted with all Consortium members as well as the external Consultancy Panels for this purpose. The progress at Consortium meetings was also supported and monitored by an external expert. Such an open and strategic approach to organizing Consortium meetings, framed within reaching overall objectives and taking into account the current situation in Europe and needs of the Consortium helped the project to effectively identify challenges and overcome them, and to effectively identify opportunities and make use of them. For example, the National and European Consultancy Panels were in the course of the project identified as very powerful and highly effective structures to a sustainable dissemination of IBL across Europe so that these Panels were developed into genuine collaborative structures to work with the Consortium beyond a merely consulting role. To give another example, we identified a lack of European-level networks of specific actors relevant to our concerns (a multi-level dissemination of innovative pedagogies in maths and science education) and as a consequence set out to build such networks. This resulted in the publication of a regular newsletter, a network with currently approximately 1000 contacts linking research, practice and policy and the organization of two European-level events in Brussels.

Also, implementation experiences and learning outcomes fed not only into subsequent project implementation but were as well reflected and published in reports and guides (see list above). A good example here are the dissemination guides to teachers and out-of-school target groups (parents, policy makers, etc.). PRIMAS dissemination guides first briefly detail the theoretical basis for designing dissemination activities (e.g. diffusion theory of innovation according to Rogers; participatory models of interventions), provide practice-oriented guidance to designing dissemination activities and also provide a catalogue and reflective case studies of concrete dissemination activities. The PRIMAS guide for dissemination activities won the 2014 Scientix Award, based on a public voting. This evidences the broad acceptance of the innovative concept that drove the design of this guide: research-based, practice-oriented, reflective of concrete experiences and rich in examples.

PRIMAS is also a project that combined research with dissemination in an innovative way and this fostered the success of the project. PRIMAS did not only develop its activities based on research but also combined a research strand (formative and summative evaluation, external evaluation) with other working strands and with dissemination to concrete target groups. The formative evaluation, together with the advice received from the European Consultancy and Expert Panel, provided for a continuous improvement of the project's activities.

The external Panels (with members from beyond the university teams) also supported the project's links to other European initiatives such as similar projects like Scientix (operated by European Schoolnet). The management of communities and the establishment of sustainable networks has been a priority of the Coordinating team at the University of Education Freiburg. The innovative project structures and entrepreneurial management foci were essential in building European-wide sustainable multi-stakeholder communities that continue to support the dissemination of inquiry-based learning beyond the project's lifetime; and networks on which future initiatives can rely on. This has been an outstanding achievement of PRIMAS. Our activities are currently further enriched and continued by an FP7-project that receives funding from 2013–2016, mascil – mathematics and science for life.

Orientation towards societal challenges

- Health, demographic change and wellbeing
- Food security, sustainable agriculture and forestry, marine and maritime and inland water research, and the Bioeconomy
- Secure, clean and efficient energy
- Smart, green and integrated transport
- Climate action, environment, resource efficiency and raw materials
- Europe in a changing world – inclusive, innovative and reflective societies
- Secure societies – protecting freedom and security of Europe and its citizens

The PRIMAS initiatives aim to build young people's interest and competencies to engage with mathematics and science in a meaningful and responsible way and support their interest in pursuing careers in the STEM area. As such, the PRIMAS initiative addresses all societal challenges in a cross-cutting way.

PRIMAS in particular relates to the Horizon 2020 theme of Science with and for Society (SWAFS), which has been established as a separate Work Programme within Horizon 2020. The Science with and for Society programme takes up important principles that address European societal challenges in a cross-cutting manner.

Many of the five RRI keys (core topics of responsible research and innovation) are built into the PRIMAS approach (public engagement in advancing education, fostering science education among young people, including the regard for gender aspects, open access to foreground of the project).

The project specifically relates to the topic of fostering science education and literacy and raising young people's interest in science-related careers.

Similar initiatives

- SET-ROUTES, A pan-European women ambassadors programme, 2006–2008 (http://www.set-routes.org/)
- SIS-CATALYST – Children as Change Agents for the future of Science in Society, 2011–2014 (http://www.siscatalyst.eu/)
- IRRESISTIBLE – Including Responsible Research and innovation in cutting Edge Science and Inquiry-based Science education to improve Teacher's Ability of Bridging Learning Environments, 2013–2016 (http://www.irresistible-project.eu/)

Science Municipalities

The Science Municipality project was a national three-year project aimed at improving conditions for science education in 25 of all 98 Danish municipalities. Hence, 1/3 of all Danish pupils were affected by the project. The project was a part of the national strategy for development of science education and was funded by the Ministry of Education. Through a number of political and organisational activities, establishment of public and private stakeholder interlinkages and a robust and cost efficient methodology, the initiative has had a significant impact on the promotion of science education in the participating muni-cipalities.

Context

The private funded project "Science Team K" developed a model for a science municipality (http://danishsciencefactory.dk/science-team-k-2003-2006). The Danish Ministry of Education (MoE) found the model interesting and financed the implementation of the model in 25 municipalities effectively comprising 1/3 of all Danish pupils. The MoE considered Science Municipalities (SM) as a part of a national strategy for the development of science education. All 98 Danish Municipalities were invited to join SM out of which 33 expressed interests. The first 25 municipalities to make a political decision to participate and to allocate resources for a municipal science education coordinator were accepted as partners of SM.

Background information

Name: Science Municipalities

Organizer: Danish Science Factory

When: April 2008 – April 2011

Where: Denmark, 25 out of 98 Danish Municipalities

Who: Hans Colind Hansen, Danish Science Factory

Additional information:
http://danishsciencefactory.dk/science-municipality-project

Initiative characteristics

PE category: Public Communication

Mechanism: Awareness raising activities

Main purpose of initiative: Awareness raising, education and capacity building

Geographical scale: National (Regional)

Organizing entity: Community based organisation (professional project organisation)

Target groups: Youth, stakeholder groups and public officials

H2020 Societal Grand Challenge(s):
- Food security, sustainable agriculture and forestry, marine and maritime and inland water research, and the Bioeconomy;
- Europe in a changing world - inclusive, innovative and reflective societies

Aims and mechanisms

The aim was to activate and coordinate all positive local forces and resources in the 25 participating municipalities towards a common purpose of improving the quality of science education.

The idea was to stimulate the local "science cultures" by introducing a local "science infrastructure". Among the core elements of the infrastructure was 1) a municipal Science education strategy 2) political anchoring through the elected boards of the municipalities, 3) Science education coordinators, 4) Science education boards, 5) networks for science teachers. The core elements were meant to empower municipal science education coordinators as municipal change agents and to ensure a coordinated effort – politically as well as in practice – within each municipality.

After the finalisation of the initiative, the most comprehensive mechanisms applied were described as recommendations for other interested municipalities. The top-five recommendations were:

1. Form a science education strategy

A politically accepted and supported science education strategy can ensure the prioritization of a common targeted effort among the many relevant stakeholders who have an influence on science education directly or who play an important role through their impact on the conditions for performing professional science teaching. In order to lead to the desired positive changes in science education, implementation of the strategy's visions and goals must be facilitated by competent personnel who understand the agendas from the administrative level in the municipality and the conditions for development in schools. This is a prerequisite for implementing the visions from paper to practice.

2. Ensure political support and foundation

Local political commitment and engagement is essential for implementing successful municipal science education efforts, because this support spreads to the administrative leaders in the municipal departments. A commitment from these levels in the municipality's political system legitimizes a high priority of science education among school leaders and teachers. Science education coordinators and boards should be engaged with the focused and sustained effort, which is required to achieve the political attention.

3. Designate science education coordinators

Science education coordinators with extensive networks both in schools, municipal departments and in the political system are crucial for establishing coordination of a focused and shared effort for improved science education in municipalities. They play crucial roles in sustaining the development during and after the project.

4. Form a science education board

A quorate science education board should comprise representatives from all types of municipal organisations with connection to science education. Such a board is an ideal forum for development of a science education strategy. The board members are indispensable partners for the science education coordinators and they are necessary for maintaining the focus on science education both among politicians and among internal stakeholders in schools.

5. Support science teacher networks

Networks for science teachers are necessary for science education improvement for at least two reasons. The science education coordinators benefit from the networks in the process of establishing the necessary overview of resources in the municipality, and the networks are forums where the many coordinated initiatives can be brought into play among the teachers. The most fruitful science teacher networks are formed on the basis of voluntary participation, where teachers have a voice. Effective teacher networks must also have a facilitator – a role ideal for the science education coordinator.

For further recommendations please refer to: http://danishsciencefactory.dk/science-municipality-project from where a summary publication can be downloaded – please refer to: http://www.formidling.dk/graphics/DNF/skole/Science-kommuner/Engelsk/Science-kommuner%20-%20engelsk-24.pdf

Following the formal termination of the project a PhD Business Fellowship is doing research in four out of the 25 Science Municipalities by applying social network analysis to examine the structure and qualities of

the networks of key municipal stakeholders. Please refer to the first paper presented at ICSEI 2012: Linking educational stakeholders through municipal support structures, among other papers in English

Results

During the implementation of the project, The Department of Science Education, University of Copenhagen, conducted yearly qualitative evaluations. Please refer to the evaluations in Danish at, http://science-kommuner.wikispaces.com/Evaluering and an English leaflet: http://www.formidling.dk/graphics/DNF/skole/Science-kommuner/Engelsk/Science-kommuner%20-%20engelsk-24.pdf

An article presented at ICSEI 2012 contains extract from the qualitative evaluation in English – please refer to: http://science-kommuner.wikispaces.com/file/view/Wab%20number%201792147%2C%20Jan%20S%C3%B8lberg%20and%20Ane%20Jensen.pdf/429194150/Wab%20number%201792147%2C%20Jan%20S%C3%B8lberg%20and%20Ane%20Jensen.pdf

- The Danish TIMSS 2011 reports a significant positive difference between the skills of grade four pupils in the 25 Science Municipalities and the rest of the 98 Danish Municipalities. The copyrights to the TIMSS 2011 report belongs to Professor Peter Allerup – please refer to: http://edu.au.dk/forskning/projekter/internationaleundersoegelser/timss/
- The concept of being a Science Municipality spreads in Denmark – still four years after the closing of the project new municipalities adopt the concept. The Danish National Centre for Science Education is applying the concept all over Denmark. For the time being the majority of Danish municipalities have voluntarily adopted the whole concept or elements from Science Municipalities – please refer to: http://ntsnet.dk/kommuner/koordinatorer
- One of the five Danish regions, The Region of Southern Denmark, has based its development into a Science Region on the concept of Science Municipalities – please refer to the leaflet: http://www.regionsyddanmark.dk/dwn200071. The Region of Southern Denmark has developed a statistical model to monitor the impact of implementing the concept of Science Municipalities – please refer to indicator 10.1, 10.2 and 10.3 in the yearly report: http://www.syddanskuddannelsesaftale.dk/images/Media/Effektmodel_2012.pdf
- More have identified the initiative as inspiring e.g. the Norwegian Government who has recently launched a national science strategy 2015 in which one component is referring to the SM initiative – please refer to http://www.regjeringen.no/nb/dep/kd/aktuelt/nyheter/2024/20-millioner-til-realfagskommuner.html?id=770989 and http://www.statsbudsjettet.no/Statsbudsjettet-2015/Statsbudsjettet-fra-A-til-A/Realfag/

Advantages

The concept seems to be easy adoptable to independent units responsible for the local development of science education. Furthermore, the initiative is cost efficient to implement and maintain as it only takes a few extra man-hours from the science education coordinator and the teachers involved. As local co-creation is a precondition for implementation, the initiative is flexible enough to overcome the local and regional differences in social, economic and cultural capital.

The overall advantages are:
- Robust and cost efficient methodology drawing on existing local structures and initiatives.
- Better coordination between policy and practice with regards to science education initiatives.
- Likely to be sustainable as it is respecting the local cultures, needs and users.
- Better access to and utilisation of local resources for use in schools and other institutions.
- Higher quality of teaching in science due to more options for teachers and local professional development leading to possible student learning gains.

Obstacles

As mentioned the municipal science education coordinator is a key person in developing a Science Municipality. In the initial phase of introducing SM the resources and personal skills of the coordinator are crucial. A local science educations board and network activities with other coordinators can support the coordinator.

Science teachers' active participation in local teacher networks is time consuming – especially in the establishing phase. The coordinator and the school principals have to negotiate who should pay for the working hours spent by the teachers

Municipal administration is organised in more departments. It is hard to the departments responsible for schools to cooperate with the department responsible engineering & environmental management – a cooperation that could have had a great potential of introducing the societal application of science in the local science education practice.

Please refer to the insight and recommendation sections of the following leaflet: http://danishsciencefactory.dk/sites/default/files/files/science-kommuner_-_engelsk-24_1.pdf

Innovative dimensions

- The participatory approach transforming a national agenda on science education into a municipal agenda
- The introduction of the municipal science coordinator as a local change agent
- The introduction of the municipal science education strategy as a tool to embed the concept in the municipal political and administrative structures
- The evaluation component as an integrated and an on-going part of the project design, which offered learning opportunities throughout the project implementation

Orientation towards societal challenges

- Health, demographic change and wellbeing
- Food security, sustainable agriculture and forestry, marine and maritime and inland water research, and the Bioeconomy
- Secure, clean and efficient energy
- Smart, green and integrated transport
- Climate action, environment, resource efficiency and raw materials
- Europe in a changing world – inclusive, innovative and reflective societies
- Secure societies – protecting freedom and security of Europe and its citizens

The overall aim of the SM initiative was to improve local conditions for science education. The expected long-term impact of the initiative therefor should be better-educated generations with respect to science, which will address the challenges in Horizon 2020.

The SM initiative directly links to Horizon 2020 by addressing the topic of a changing Europe. By creating stronger connections between policy-makers and practitioners in science education the SM initiative is a model for enduring development. It builds and sustains networks within a municipality that allow for coordination and cohesion of efforts of many different stakeholders in order to achieve long terms goals in a otherwise volatile and changing world.

The initiative also indirectly addresses the challenge of sustainable development. In 2014 the world celebrates the UN declared decade of Education for Sustainable Development (ESD). ESD is only slowly being adopted in teaching practices and the initiative could help accelerating this process. This hypothesis the pilot project "Green Generation" is testing in 10 Danish Municipalities

Similar initiatives

- ECB – European Coordinating Body in Maths, Science and Technology Education, 2011–2014 (http://www.ingenious-science.eu/web/guest/about)
- IMST – innovations make schools top, Austria, 2000– (https://www.imst.ac.at/texte/index/bereich_id:8/seite_id:8)
- Science, Technology and Engineering Programme for Schools (STEPs) by Engineers Ireland (the society of professional engineers), 2000– (http://steps.ie/)

Nanodialogue Project

The Nanodialogue project aimed to raise curiosity and stimulate debate on nanotechnologies and nanosciences, and through dialogue and deliberations engage the general public and university/industry stakeholders in discussions about emerging science and technologies at large. Through a participatory project design, the general public and a variety of stakeholders were involved in an 'upstream' manner from the process of designing the main exhibition to its evaluation.

Context

The consortium, coordinated by the Fondaztione IDIS – Città della Scienza, based in Naples, Italy, comprises a total of 11 organisations of excellence in different fields (scientific research, social participation, science communication) representing a wide European dimension. These elements will ensure that high quality standards are maintained in the communication tools and methodologies, while contributing to the widespread diffusion of the project's results. The participant institutions and their team members include: Fondazione Idis – Città della Scienza (Italy); Associazione MQC2 (Italy); University of Westminster – Centre for Study on; Democracy (United Kingdom); Ecsite – the European Network of Science Centres; and Museums (Belgium); Centre de Culture Scientifique, Technique et; Industrielle de Grenoble (France) Flanders Technology International Foundation (Belgium); Deutsches Museum (Germany); Universeum AB (Sweden); Ciência Viva – Agência Nacional para a Cultura; Científica e Tecnológica (Portugal); Ahhaa Science Centre (Estonia) and Fundació Parc Científic de Barcelona (Spain).

Background information

Name: Nanodialogue Project

Coordinator: Fondazione IDIS – Città della Scienza

When: March 2005 – February 2007

Where: Europe – Italy, Belgium, Germany, France, Spain, Portugal, Sweden, Estonia

Who: Luigi Amodio, Fondazione IDIS – Città della Scienza

Additional information: http://cordis.europa.eu/documents/documentlibrary/102583451EN6.pdf

Initiative characteristics

PE category: Public Communication

Mechanism: Awareness raising activities (exhibition, debates) scenario workshop

Main purpose of initiative: Awareness raising, dialogue and debate

Geographical scale: 8 European countries

Organizing entity: Science museum

Target groups: lay public, industry/university

H2020 Societal Grand Challenge(s):
- Food security, sustainable agriculture and forestry, marine and maritime and inland water research, and the Bioeconomy;
- Climate action, environment, resource efficiency and raw materials;
- Secure societies – protecting freedom and security of Europe and its citizens

Aims and mechanisms

The main goal of the project was to raise curiosity and stimulate debate on nanotechnologies and nanosciences, both for the general public and for more sophisticated targets. So, the exhibition should be exciting enough to achieve curiosity for science and research in general, and specifically for nanosciences and nanotechnologies. The debate approach – and the Ethical, Legal and Social Aspects (ELSA) involved suggested to organise the exhibition module as an ancient "agorà", a public area to meet, discuss and concentrate, an area where visitors could compare their ideas, opinions and points of view.

To share information about N&N with citizens, the width of reach of the Nanodialogue consortium relied on a multitude of tools and activities, each targeted to specific publics with different information needs. In particular, the consortium carried out and implemented several activities like seminars, demonstrations, lectures, guided tours, shows, workshops, discussions and theatre performances.

The main publics can be grouped in three clusters: schools, families (general public) and industry/university. Especially for this last group, the Nanodialogue project has contributed to consolidate existing collaborations and to create new partnerships. In some instances, science centres have been spontaneously contacted by N&N industries in order to conduct public presentations and discussions of their products within the exhibition space. To stimulate public interest for front line research in N&N, Nanodialogue provide the public with different levels of information, allowing various degrees of depth according to the needs and desires of the public. This was mainly achieved through the programs and activities, for which the Nanodialogue exhibition module was a catalyst. Worth noticing is on the one hand the pro-active interest of the industry, as noted before, and the self-declared interest of groups of visitors that came to the science centre on purpose to visit the exhibition and take part in the programs. Although these visitors represent a very small part, in numerical terms,

they are at the same time "engaged citizens" that take advantage of the Nanodialogue exhibition as a platform to understand more and discuss about N&N. This phenomenon is especially visible when N&N are reported in the news. It shows that despite the small size of the exhibition, its role as "attractor" for public debate is considerable. It is also an instrument for science centres to reflect on the "value" of their visitors, which lies not only in their numbers but also in the quality of the activities they engage in at the science centre and the kind of contributions they make. Nanodialogue is also contributing to challenge science centres and museums as "repositories of truth", and presenting them instead as a place for public debate and dialogue, and to support the development of science rather than just acknowledging it.

To stimulate dialogue with various groups, in addition to the sociological research coordinated by the CSD, all the partners organized several debates using the "Decide" format (a tool to structure conversations and debates). In addition, on 9 May 6 institutions held debates on nanotechnology simultaneously. This activity was particularly welcomed by teachers, who could use it at school, acting effectively as "multipliers" to reach the student population in a direct way.

Results

From March to October 2006, 706 visitors to the exhibitions held in the eight participating countries were invited at random to complete a brief questionnaire to determine: 1) their socio-demographic profile, 2) their perceptions and expectations regarding N&N, and 3) their assessment of the potential benefits and risks posed by N&N, based on the content of the exhibition. Sections 1 and 2 were completed by the visitors before viewing the exhibition while section (iii) was completed following the exhibition. Some of the respondents to the questionnaires were also involved in a series of 16 focus groups across Europe for a brief discussion to further explore their views with the aid of professional moderators

Advantages

Since NanoDialogue started, it was clear that one of the strong points was the possibility to communicate with a large European public. The science centres partners have an attendance (in the 6 months display period of the exhibition) of more than 1,000,000 visitors! This large audience could be informed, through the exhibition module, the local events, the lectures and the science demo organized in the different venues, about the latest researches on Nanotechnology and Nanosciences. More over the exhibition and the events organized wanted also to give input to citizens to take part in the debate, leaving their opinions and comments on the topic. The Citizens' Feedback Assessment explored visitors' perceptions and expectations on nanotechnologies and nanosciences (N&N). The questions and the resulting data analysis were produced by the University of Westminster, to elaborate a list of recommendation and suggestion for the "governance" agenda in the ERA.

Obstacles

Limited mobilization of the public and stakeholders, difficulty to organize similar activities in the 8 countries, due to difference in language and cultural background

Innovative dimensions

The main innovative task in the project was to design the structure, the content and the shape of the exhibition module in a special participatory activity (in form of a Scenario Workshop) where all the actors involved – nano scientists, social scientists, philosophers, designers, museum staff and politicians were put together to collaborate at the identification of the main features of the exhibition module. Including in the consortium a group of European science centres and museums helped to reach a wide European audience (more than 1.000.000 visitors), to be involved into the dialogue process. This approach is an interesting response to EU efforts towards greater public involvement, as an exciting new method of transactional public discussion over future research.

Orientation towards societal challenges

- Health, demographic change and wellbeing
- Food security, sustainable agriculture and forestry, marine and maritime and inland water research, and the Bioeconomy
- Secure, clean and efficient energy
- Smart, green and integrated transport
- Climate action, environment, resource efficiency and raw materials
- Europe in a changing world – inclusive, innovative and reflective societies
- Secure societies – protecting freedom and security of Europe and its citizens

Food security and the Bioeconomy:
This topic was dealt with in the exhibition when we talked about nanoparticles and food.
Climate action, environment, resource efficiency and raw materials:
This topic was dealt with in the exhibition when we talked about the effect of nanoparticles on environment.

Secure societies – protecting freedom and security of Europe and its citizens:
This topic was dealt with in the exhibition when we talked about the effect of nanoparticles and RFID devices to control people.

> **Similar initiatives**
> - PIER – Public Involvement with an Exhibition of Responsible Research and Innovation, 2014-2015 (http://www.pier-project.eu/?page_id=1043-)
> - Sea for Society, 2012-2015 (http://seaforsociety.eu/np4/91)
> - TWIST – Towards Women In Science and Technology 2010-2013 (http://www.the-twist-project.eu/en/)

Breaking and Entering
– Explore how science and society relate

The overall aim of the Breaking & Entering project was to create an installation that invited visitors to participate in debates about social responsibility of science – using synthetic biology as an example. The combination of physical and digital elements, layered communication forms and interactive design, among others features, allowed for extensive debate and interaction. The experimental status of the installation furthermore allows for a multi-faceted exploration of the potentials of science communication and public engagement.

Context

The installation was a continuation of work undertaken previously by Maja Horst and designer Birte Dalsgaard to experiment with the use of physical installations to communicate social science about emerging science and technology. For this new project, the group of creators was enlarged with researchers from communication, social science, organization, design, IT, synthetic biology and philosophy: Sarah R Davies, Cecilie Glerup, Kjetil Sandvik, Jakob Knudsen, Agnete Juul, Nanna Heinz and Sune Holm.

Specifically, the installation communicated results produced during a project funded by the Danish Social Science Research Council about 'Scientific Social Responsibility'. It used synthetic biology as example due to a cross-disciplinary research project within the Center for Synthetic Biology at the University of Copenhagen within which many of us were engaged.

Additional funding was provided by the organizers of the Science in the City festival created as part of the ESOF 2014 conference in Copenhagen. The installation was exhibited as part of this festival to general members of the public as well as conference delegates.

Background information

Name: Breaking & Entering: Explore how science and society relate (Installation about the social responsibility of science)

Organizer: Department of Media, Cognition and Communication, University of Copenhagen

When: August 2013 – August 2014 with specific exhibition June 2014

Where: Denmark

Who: Maja Horst, Department of Media, Cognition and Communication, University of Copenhagen

Additional information: http://english.breaking-entering.dk/

Initiative characteristics

PE category: Public Communication

Mechanism: Installation

Main purpose of initiative: Awareness raising, dialogue and debate

Geographical scale: National

Organizing entity: Academic institution

Target groups: Lay publics

H2020 Societal Grand Challenge(s):
- Health, demographic change and wellbeing;
- Food security, sustainable agriculture and forestry, marine and maritime and inland water research, and the Bioeconomy;
- Secure, clean and efficient energy;
- Climate action, environment, resource efficiency and raw materials

Aims and mechanisms

The objective of the installation was to generate interaction and dialogue about the social role of science as well as inviting visitors to form opinions on this theme. Using physical and digital means of communication, the installation demonstrated how there are different views and ideals on what the social responsibility of science is and should be, and simultaneously invited visitors to express their own views on the issues.

The installation was designed to allow visitors to express their opinions in a physical way and hence leave traces that might influence subsequent visitors. In this way, the installation also demonstrated how the process of public sense-making takes place in a social setting where each statement becomes part of the context for the continued debate.

A secondary aim was to experiment with physical and digital forms of science communication in order to continue our work on the exploration of how immersive installations of science communication can be used to generate interaction and dialogue with visitors.

The installation was created to evoke curiosity among visitors to the science festival. It was built of white cardboard cubes upon which there were printed various pictures and text as well as films running on built-in iPads. The installation's main feature was a large structure (called 'the tower of science') split into four parts, each of which symbolized a particular ideal about the social responsibility of science (the four ideals are described further in a research paper by Cecilie Glerup and Maja Horst from 2014).

At each of the four entrances there was an iPad with a short film where an actor playing a scientist talked about his views on the social responsibility of science based on the particular ideal. Passing through the entrance, visitors came to a small room, where they were asked to engage in various interactive features expanding the meaning of the particular ideal of the social responsibility of science.

Outside the tower, various other stations invited visitors to take part in discussions about expectations towards synthetic biology, the risk involved in developing new technologies as well as the role and opinions of different stakeholders. Most of these interactions were based on dilemmas arising from our social science research, and visitors were presented with these dilemmas and asked to mark their own answer or preference. Subsequent visitors would then see these traces and they would add to the impression of the installation and keep changing its appearance.

An extra layer was introduced by iPads lent to visitors. Many of the interactive features had a symbol that could be scanned in order for the iPad to show a video that gave the visitors further input to their reflections. The iPads could also be used to post comments and photos on a Facebook page connected to the installation.

There was a desk at the entrance to the installation staffed by student assistants. Their primary task was to hand out iPads (and look after the installation), but they also served as hosts talking to people about the installation, what it meant and how and why it was created. It turned out that many visitors would go into the installation from the back, so at certain times, the student assistants would leave the desk and go into the installation to invite visitors to use the iPad and demonstrate how it worked.

The installation was placed in a tent with a number of other science communication and engagement efforts from the University of Copenhagen. The installation was advertised as part of the programme, but most visitors seem to come to the installation as a more or less accidental part of their general visit to the festival. We had tried to generate interest through the use of social media in the last month before the exhibition, but this effort did not really get off the ground. We did, however, experience interest from a number of ESOF-delegates, who came specifically to see the installation.

Results

The installation generated a lot of debate, interaction and questions at the site of the exhibition, but we have still to engage in more in-depth analysis of the data collected in relation to the exhibition. We have documented the various interactive features by taking photographs at regular intervals, so that we can see how the traces left by visitors developed over time. We have also collected all comments left in digital or physical space. In addition we have made extensive field notes – both from the general impressions of the exhibition and from the specific engagements by students with the visitors. Furthermore, we have a set of qualitative questionnaires filled out individ-

ually by 15 visitors to the installation, which document the experience of visiting the installation. All of this material is intended for a book-length discussion of science communication, where this and our previous installations form part of the data material.

In more general terms, the installation was used in relation to promotion of the entire festival and was also referenced in several news reports from the festival. It is, in our experience, hard to make formal evaluations of installations like these, as they are intended to enhance reflexivity in a way that is not necessarily easy to pinpoint to the specific meeting with the installation.

The previous installations have been analysed in terms of outcome in several academic papers (see for instance Maja Horst (2011): Taking our own medicine: On an experiment in science communication, Science and Engineering Ethics. 17(4,)801-815).

Advantages

The installation is at the same time a very structured, strategically designed mode of communication and a very open form that allows a number of different reactions and engagements on behalf of the visitors. People who entered the installation did not have to engage with the interactive elements in the way we intended and we took great care not to intervene unless they were damaging the installation. In this sense, the format of an interactive installation is used to experiment with offering the audience speech-positions, which are different from what is otherwise found in a science festival.

In particular, we noticed that people in all age groups engaged, although in very different ways. Smaller children were for instance interested in the voting systems, where little pegs could be placed in holes, or in walking around with the iPads looking for scan-signs. Teenagers seemed to be particularly interested in features where they would be writing hopes, fears and wishes on pieces of paper and leaving them for other people to see – but also the other elements of interaction. All age groups including adults, however, interacted in many different ways and there was great variation in the way they engaged with the installation. Some seemed to want to look at the features without wanting to engage – and if we tried to give them an iPad,
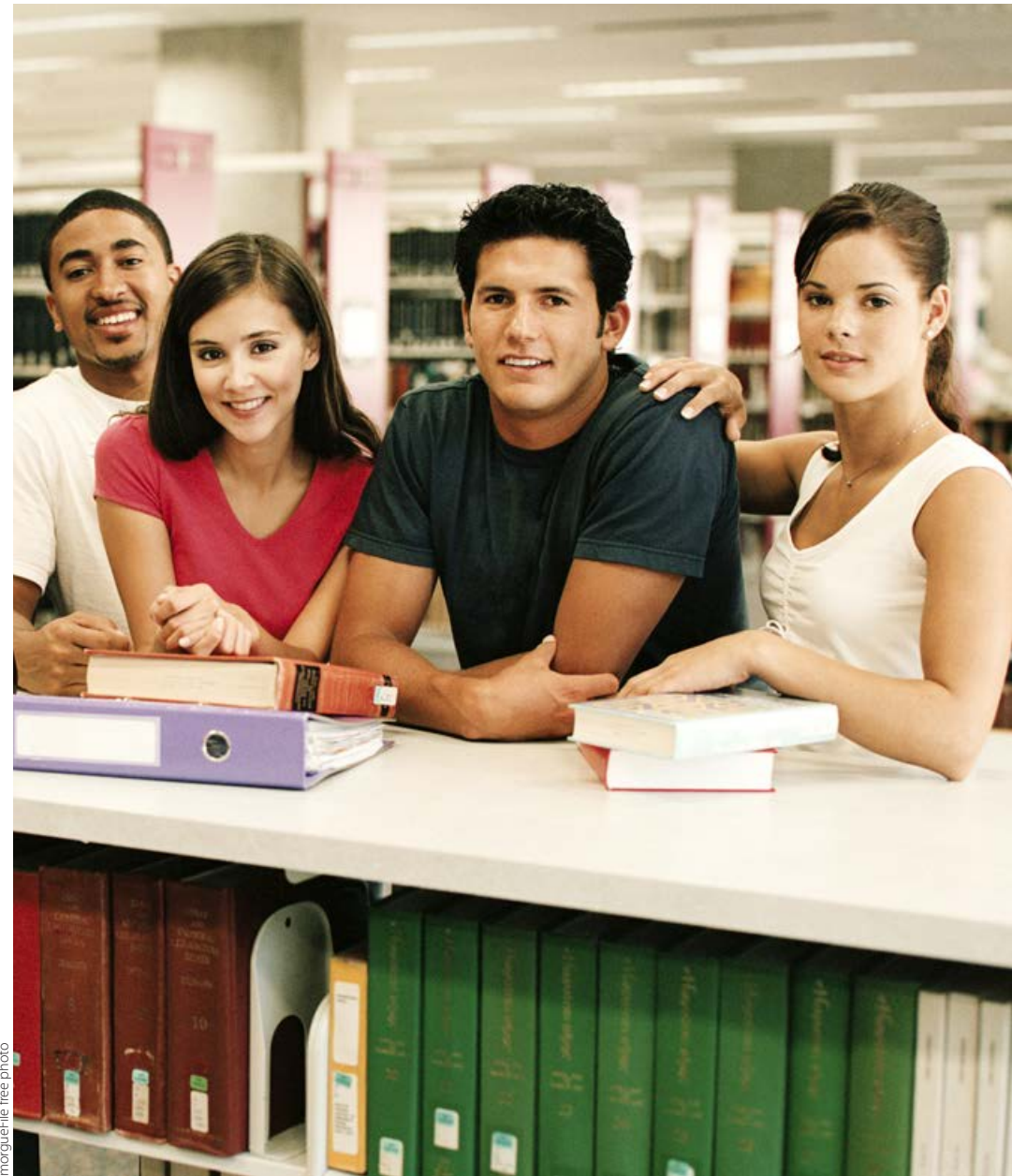
morgueFile free photo

they either left or at least refused to take it. Others would want to have a lot of explanation and would discuss with the student-hosts what they thought about the installation and also tell the students if they thought some elements of the installation was designed wrongly or should have had a different meaning.

From the reactions we had at the exhibition, there is no doubt that the installation made a profound impression on some of its visitors and engaged them deeply in reflecting about the issues. However, considering the entire project, the advantages of the installation are primarily experimental as it allows a multi-faceted exploration of what science communication and public engagement can be. Following from this, the most analytically interesting parts of the exhibition were all the ways in which visitors engaged with the installation, that we had not foreseen.

Obstacles

First of all, creating such an installation is an incredible amount of work and it is rather expensive. The direct costs amount to approximately 60.000 euro, but in addition comes all the time spent by all involved academics – which in total amount to about 18 man-months. It is difficult to raise that kind of money, but in this case we were helped by the history of previous installations and the fact that there was money available for the specific purpose of creating exhibits for the Science in the City festival. Besides this, there has been a lot of support for the project – both the festival organizers and the university leadership have been very encouraging.

It must be concluded, however, that the work with such an installation is a very large investment and while it is clearly worthwhile for us as an experiment that feeds into research, one has to acknowledge that as a mainstream form of communication it will possibly demand too many resources.

We originally intended to involve the scientists in the Center for Synthetic Biology more, but due to time pressure this became impossible. However, it was also difficult to explain this form of science communication, where dissemination, information and explanation are not as important as engagement and dialogue to the entire group of scientists. We were there-fore very fortunate, that we could work specifically with the project manager at the Center, Nanna Heinz, who served as an excellent translator (in the Latourian sense) of the facts of synthetic biology as well as the epistemic cultures of synthetic biologist.

Innovative dimensions

As the installation is experimental most things are new and untested. Which also means that a lot of elements did not work as we intended – although the overall experience was that the installation worked well in creating dialogue and interaction. It was the third time we used a physical installation to communicate social science research on emerging science and technology, so we had some experience with the affordances and limitations of the format – specifically in terms of the enormous amount of technical and material constraints such a format imposes.

It was, however, the first time we used a combination of physical and digital elements. While the videos worked relatively well, the combination to our Facebook page did not quite work. It seemed that when visitors understood how to use the iPads as scanning instruments, they got locked onto this function and could or would not change the functionality so they could write comments on the Facebook page.

Compared to most exhibits in science centers, for instance, the innovation of this project is that its content is based firmly on social science and only includes natural-scientific explanation in order to allow people to engage with the questions raised by social science. Our installations also focus on research questions more than on ready-made facts. This is to make sure that we, as researchers, are actually interested in the outcomes of the interaction with the visitors. In this sense, we try to invite visitors into 'a landscape' of public debate and let them participate however they want – rather than have a certain message that we want them to understand and appropriate. This approach also poses challenges, because it goes against visitors' expectations of science communication to be informative and have specific messages. Some visitors actually get confused or disappointed when these expectations are not met.

Based upon our earlier work, we accommodate for this potential problem by working with a layered form of communication – in this case the iPad movies, which would give more explanation about a given interactive setup. For instance, the display on risk, where people were asked to put an elastic band around the number of people they thought it would be acceptable to put at risk in order to develop a cure for 1 million people. Having done this, visitors could scan a symbol launching a video, which explained further the current system for drug approval, its benefits in terms of minimizing risk, and its costs in the form of steering the pharmaceutical industry even further towards block-buster drugs for the developed world.

Orientation towards societal challenges

- Health, demographic change and wellbeing
- Food security, sustainable agriculture and forestry, marine and maritime and inland water research, and the Bioeconomy
- Secure, clean and efficient energy
- Smart, green and integrated transport
- Climate action, environment, resource efficiency and raw materials
- Europe in a changing world – inclusive, innovative and reflective societies
- Secure societies – protecting freedom and security of Europe and its citizens

Dealing with the development of synthetic biology, the installation was relevant for both challenge 1, 2, 3 and 5, as we used examples of how synthetic biology could be used to create 'new vaccines', 'green production halls', 'sustainable biofuels' and 'living houses' – as well as the general theme of the social responsibility of science.

We were careful to present each of the examples in a way that hinted at both benefits and risks, and encouraged people to think about the social responsibility of science. For instance our description of the green production halls read as follows: 'Synthetic biologists are attempting to develop bioreactors to produce valuable molecules, using sunlight as an energy source. Such substances are often too complicated to create using ordinary chemical methods. This kind of production is sustainable, but must be developed within contained systems, isolated from surrounding eco-systems. Some people question whether this is possible. Others think that these systems will give new life to recently abandoned Danish greenhouses. You can read more about the bioreactors in the following link: http://synbio.ku.dk/project_list/biosynergy/about_biosynergy/.'

In general, however, the level of abstraction makes it difficult to point to specific challenges as the core focus. Rather the theme hinted at the general societal challenge of creating a robust knowledge society, where scientific development is taking place in accordance with social values. This could be seen to relate to challenge 6.

Similar initiatives

- PIER – Public Involvement with an Exhibition of Responsible Research and Innovation, 2014-2015 (http://www.pier-project.eu/?page_id=1043-)
- Installation 'Landscape of expectations', 2007 (Maja Horst (2011): Taking our own medicine: On an experiment in science communication, Science and Engineering Ethics. 17(4,)801-815)

EARTHWAKE

The EARTHWAKE project aimed to develop recommendations to harness the appeal of popular strands of TV, such as drama, wildlife programmes and sports, to create a new awareness and interest in science. Through a two-day workshop, the objective was to bring scientists closer to media representatives to build bridges between the two communities in order to advance dialogue and collaboration in promoting audio-visual science communication.

Context

The EARTHWAKE project was organised by a consortium of four members. It centred on a two-day workshop in 2007, bringing together TV executives, scientists, science communicators, TV writers and producers, advertises, web designers and the public. It was funded 100% by the European Commission. The event attracted high-profile speakers and an audience of about 100 representatives from the media, science communities and the public. The workshop developed a set of 16 recommendations.

The four project partners were:

- Euroscience (European Association for the Promotion of Science and Technology) – project co-ordinator, focusing on science and technology communication and promotion.
- OMNI Communications Ltd – a London based audio visual and event production company specialising in European public awareness of science activities through its arm EuroPAWS[1]

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[1] **EuroPAWS** is a project started in 2001 to highlight the potential for science and technology across television and new media output in Europe, see http://europaws.org/

Background information

Name: Science Municipalities - European Television? A workshop to prepare a new agenda for science communication

Organizer: EUROSCIENCE

When: November 2007 – December 2007

Where: France, Strasbourg

Who: Raymond Seltz, EUROSCIENCE

Additional information: www.euroscience.org

Initiative characteristics

PE category: Public Communication

Mechanism: Awareness raising activities

Main purpose of initiative: Awareness raising

Geographical scale: European

Organizing entity: NGO (non-profit grass-roots association)

Target groups: Lay publics, media stakeholders, science communication experts

H2020 Societal Grand Challenge(s): All seven

- Systemics Network International (SNI) – a Brussels based space and telecommunications consultancy.
- The European Physical Society (EPS) – based in Mulhouse, a membership organisation made up of the national professional physics associations in Europe.

Aims and mechanisms

Participants gathered in Strasbourg to explore models for European collaboration in audio-visual science communication, how best practice can be spread and how targeted money can act as a catalyst. The aim of the EARTHWAKE workshop was to develop recommendations to harness the appeal of popular strands of TV, such as drama, wildlife programmes and sports, to create a new awareness and interest in science.

Unlike in dedicated science programming which often addresses the converted audiences, EARTHWAKE addressed the new philosophy of 'science *in* society', introducing much more science into drama, wildlife programmes and sports, which command huge audiences.

Another aim was to bring scientists closer to TV people (executives, producers, writers etc.), by bringing the two groups to the same table. The world is becoming ever more scientific, and broadcasters realise this. But as most of them have an arts background, for them the gap is huge. So the project had a cultural goal as well – to build bridges between the two communities to make it easier for them to communicate.

The standing of the project partners enabled them to secure a number of high-profile speakers from the media and science (communication) communities, including representatives from the BBC, the German Screen Writers' Guild, the European Broadcasting Union, the European Space Agency and CERN. As the TV/AV media reach large swathes of the European population, the participation of important members of the TV/AV media represented a key bridge to the public. In each session of the workshop, set out below, the role of the public as viewers was central.

Brief outline of the workshops sessions
1. Opening Session – The Challenge The aims of the EARTHWAKE Project
2. Science in TV drama – Beyond 'cops and docs': are there more roles for scientists on television? Considering how to harness the potentials of science for drama and of drama for science communication, drawing on the enormous recent success of science based TV series?
3. Programmes Sans Frontières Focusing specifically on the representation of space in popular European TV.
4. Your Chance to Shape European TV – A public session on the growing role of science Following two sessions geared to professionals, this session explored what the public likes in terms of science on television.
5. Fascination of the Natural and Reported Worlds Having taken TV Drama as a specific area, this session focused on science in other TV outlets including the web.
6. The Way Forward The chairs of each session presented a summary of what conclusions and recommendations had emerged from their session.

Source: Earthwake Final Activity Report (Conclusions and Recommendations), p. 5.

The consortium did a lot of advertising to promote the workshop, as the challenge was to get people to the event. Specific items and tools were produced for the purpose of advertising the EARTHWAKE workshop (e.g. flyers, programme booklet, website), and the workshop was announced through a wide range of channels (e.g. mails to the workshop's target groups).

Results

The most important output is the final activity report. The final activity report not only contained a summary of the sessions that took place at the workshop but also a set of 16 recommendations.[2] These cover a wide spectrum of issues but may be encapsulated in the following general conclusion:

Science and scientific culture can occupy a much larger part of the totality of broadcast content and to facilitate this would be valuable as a means to embedding better scientific culture into popular culture The broadcasting community are insufficiently aware of the opportunities for them that are inherent in scientific content and have limited knowledge of the role and realities of science or of how to find out more about the area. The science community understand that there is a need to enhance public awareness of the role of Science in Society and the potential impact of broadcasting to this end. But they are not sufficiently aware of, or connected to, the mechanisms and networks that could make this happen and do not have a broad understanding of the variety of genres that offer opportunities for science strands in broadcasting.[3]

Specific points to be highlighted here are the lack of scientists in TV channel Boards or senior editorial positions, and the particular problems faced by writers in meeting scientists who can advise them on story ideas and in obtaining seed funding to get new science based ideas off the ground.

The final activity report was disseminated to the target audience – scientists, TV and new media people, research funders (such as research councils, the EC, the European Science Foundation) and European research organisations (such as CERN).

The EARTHWAKE project had impacts within the consortium too. It took place in parallel with EUROWISTDOM, European Women in Science TV Drama on Message. Euroscience and OMNI Communications were involved in both projects, so there was communication between the two initiatives. Euroscience and EuroPAWS at OMNI Communications have also worked closely together to develop and expand the annual Euro-

pean Science TV and New Media Festival and Awards. As a consequence of EARTHWAKE, Euroscience and OMNI Communications have created four "Science in Society" prizes alongside their four genre-based TV and New Media prizes. These Prizes are having a significant impact on TV stations.

The project partners do not have direct knowledge of the impact the workshop created beyond the project partners, as there was no funding to monitor impacts.

Advantages

The principal advantage of this project and its workshop was to bring into the same forum people from different professions in the media and science who would not normally meet. A second advantage is that they could discuss long term perspectives free from day to day pressures, and also with members of the public. Participation from across Europe also meant that practices in different countries could be shared, and cultural challenges which might be more crystallized in one or other country shared.

A big issue that affects the presentation of science on TV in particular is that many influential people in the media are arts educated. Thus while they recognize intellectually the growing presence of science and technology in modern day life, they do not necessarily engage with some of the processes needed to translate that into output across TV genres. Particular areas were highlighted which attract large audiences, like TV drama, Sport and wildlife programmes. This initiative raised some of the issues that might help remedy the situation, and with the presence of some of the people to whom this challenge was addressed. Many of the issues were common to much if not all of Europe; but they needed to be set in national contexts as Television is still largely based nationally.

The workshop also looked at areas where a quiet small injection of funding could produce a magnified effect. One such was in the support of drama writers who needed perhaps extra research effort to tease out good story themes from science settings. Writers also offer a good bridge to the public as they are not experts and identify with the perceptions of the wider

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2   http://europaws.org/archive/earthwake-project/
3   Earthwake, Final Activity Report, 2007, p. 3

community. Another advantage of Earthwake is that it set out a model for potential future liaison between TV/AV media and the world of science, particularly with regard to strategic issues affecting both communities.

Obstacles

The main obstacle to optimizing the effectiveness of this project was the call on people's time to discuss issues, which were not on their immediate professional agendas. A second obstacle was to attract a large public participation in a theme which was important to the public but which many people will not have recognized as important. The person in the street can only react to what they see, and many of the issues of the workshop lay in the background to programming for which they had few yardsticks. As it is a role of the media to know their publics, this second obstacle could be partly offset by the fact that TV stations do measure audience response and are at least partly aware of what will attract audiences in different TV genres. However it would be good to engage more of the public more directly.

In terms of the first obstacle, a good way of tempting busy professional people to take time on strategic issues is to have other such people also willing to do so. Thus the creation of a critical mass of key people as speakers and delegates was an important counter to this obstacle. There is also recognition by many in the media that science deserves an increasing profile, so a push through such a workshop may be just what is needed. A further obstacle was a limitation on follow-up research after the workshop on its impact, due to a lack of funding for this. All projects need to define boundaries and one parameter is the likelihood of different levels of support. If such a project were repeated one might argue for a greater commitment to on-going research and feedback.

Innovative dimensions

Several of the innovative features of EARTHWAKE have already been mentioned. The most significant one is probably the bringing together in one forum important people from the worlds of TV/AV media and science. In
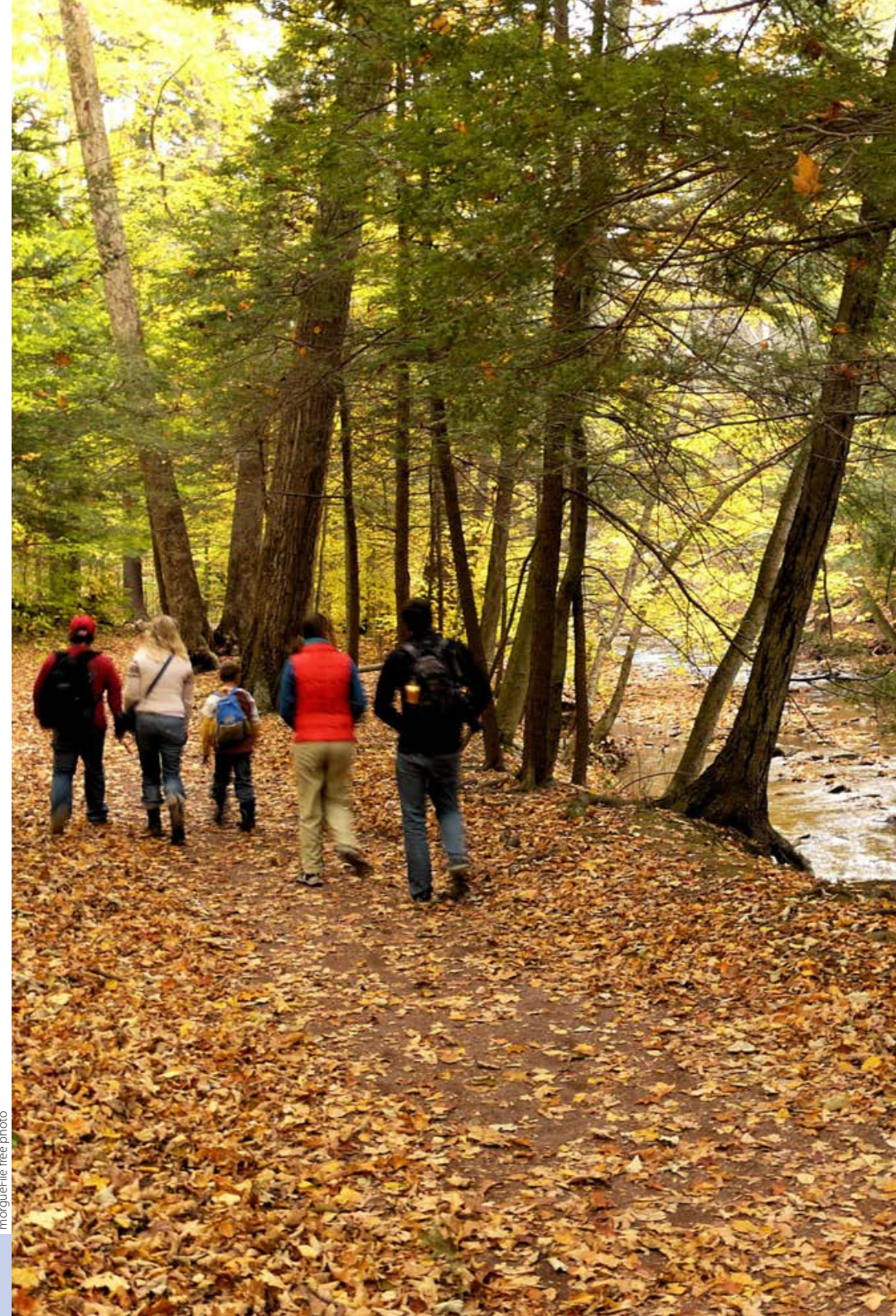
making this forum attractive for people to attend, one factor was certainly the fact that significant players from different European countries would be present, as well as those from European level organisations. Most people can spare some time if new insights seem to be in the offing, and this was borne out by the acceptances for the EARTHWAKE event.

Another feature that makes for an attractive cross-cultural forum is to have some good case examples. The mix of TV, New Media and Science examples helped ensure interest to people from a variety of backgrounds.

The very nature of the subject matter of Earthwake was innovative. Talking about science in the context of TV drama or interactive new media is a cross-cultural challenge. To hear from the practitioners from both sides of the cross-culture in the same forum is also innovative. As the subject matter was so original, it was decided not to try and be too innovative with the means of engagement as this risked creating too much uncertainty. But another innovative feature was to look ahead up to ten years to how one saw TV/AV communication developing in Europe, and the changing role of science communication in that context.

Orientation towards societal challenges

- Health, demographic change and wellbeing
- Food security, sustainable agriculture and forestry, marine and maritime and inland water research, and the Bioeconomy
- Secure, clean and efficient energy
- Smart, green and integrated transport
- Climate action, environment, resource efficiency and raw materials
- Europe in a changing world – inclusive, innovative and reflective societies
- Secure societies – protecting freedom and security of Europe and its citizens

The EARTHWAKE project maps on to all Horizon 2020 themes as it deals with the most powerful means of reaching audiences with science issues, through the TV/audio-visual media. In particular, it relates to one of the challenges of the modern era, which is the increasing demands on people's time whether professionally on in leisure time. Communicating about science today means competing with other tempting pursuits, so the central theme of EARTHWAKE is to reach a wide public through activities which they will engage in anyway – but extend the activity to include more science. Popular TV genres such as drama or sport offer good opportunities for science input, and EARTHWAKE set out various avenues for helping this process. This included catalytic support for writers to take on science themes for new drama, and scientific support for broadcasters to ensure a harmony in supply and demand for science based output across television.

Another incentive to create fresh science based TV/AV output in the image of Horizon 2020 came from EARTHWAKE. This is the creation of four Science in Society Awards as part of the expanding European Science TV and New Festival and Awards. Thus as well as trying to facilitate the means for innovative science TV/AV output the idea of rewarding success has also implemented. This has already made a significant impact.

Similar initiatives

- ESOF – EuroScience Open Forum, Copenhagen 2014 - specific focus on media representatives (http://esof2014.org/)

"Let's Do It"
– Movement and World Clean-up

Let's Do It! is a civic led mass movement which began in Estonia during 2008 when 50,000 people gathered to clean up the entire country in just five hours. This action started a global mass movement and in 2012 Let's Do It! World Cleanup was born. The aim of Let's Do It! World is to support the most intelligent and sustainable waste management principles in order to ensure a future clean World. Let's Do It! is now a network of over 112 countries and is still growing. Over a few years, Let's Do It! has engaged over 12 million participants.

Context

In 2007, there were a lot of people in Estonia who believed it was acceptable to dump their garbage in the forest. The awareness of the people was low and nobody had an exact idea of the amount of waste lying in the nature.

On the 3rd of May 2008 over 50,000 people came out of their homes to clean up Estonia, the rest followed the process via all the media channels. That's 4% out of a population of 1.3 million. Under normal circumstances it would have taken the government three years and 22,500,000 Euros to clean up the same amount of illegal garbage, but it was done for 500,000 euros and in only five hours.

See the 5-minute video of the start of the movement here:
https://www.youtube.com/watch?v=A5GryIDl0qY

This was the largest cooperation project known in Estonia. Hundreds of private, public and non-profit organizations supported the action by becoming active contributors. The organizations did not only support the initiative

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Background information

Name: Let's do it - movement and world clean up

Organizer: Let's Do It Foundation

When: March 2012 – December 2018

Where: Global – 112 countries involved

Who: Meelika Hirmo, Let's Do It! World

Additional information: www.letsdoitworld.org

Initiative characteristics

PE category: Public Activism

Mechanism: Social movement, awareness raising,

Main purpose of initiative: Awareness raising, education and capacity building, community building

Geographical scale: Global

Organizing entity: NGO (a civic led non-profit and non-political movement)

Target groups: Lay publics

H2020 Societal Grand Challenge(s):
- Health, demographic change and wellbeing;
- Food security, sustainable agriculture and forestry, marine and maritime and inland water research, and the Bioeconomy;
- Climate action, environment, resource efficiency and raw materials;
- Europe in a changing world - inclusive, innovative and reflective societies

with in-kind support (services, things), but they also started organizing smaller clean-up actions themselves, including their staff. Estonia witnessed a rapid change in awareness and behaviour.

Country by country this idea started to spread. In 2012, the World Clean-up 2012 campaign was announced, bringing millions of people together to clean up their countries. We are now a network of over 112 countries and growing. Over only few years, Let's Do It! has engaged over 12 million participants.

Let's Do It! is a civic led non-profit and non-political movement. We are also an accredited member at the United Nations Environment Programme (UNEP).

Aims and mechanisms

Our aim is to clean up the whole World from illegally dumped solid waste and to then keep our planet clean! We work with passion and perseverance to support the most intelligent and sustainable waste management principles in order to ensure a future clean World. To reach the essential transformation in our global society, we have set the ambitious goal to involve 350 million people by 2018. This is around 5% of the World's population and is the estimated amount to create a lasting change.

Let's Do It! model tackles this issue by supporting and inspiring massive civic led clean-up actions. We do not prioritize small actions that happen on regular basis, we wish to positively shock the whole society and therefore create an effect that would bring along a change in society. This can only happen when municipalities, companies, individuals, NGOs, activists, schools, etc. all work together. Instead of "educating" one segment of the society by only talking about the problem, we engage all social groups and learn by doing. We have witnessed that people who have been practically involved in actions like these, are not throwing trash where it is not supposed to be thrown after such actions. They are also much more likely to interfere when seeing someone else dumping waste.

Let's Do It! World consults, organizes events and supports by communications all the network countries and teams in order to help the movement grow and reach the global massiveness.

Let's Do It! World uses communication, marketing as and networking as the main basis for spreading the word. The main focus is on international media, social media and visual communication. Networking with other organisations and our own "members" is equally important to raise quality and readiness to organise a country clean-up. Let's Do It! World does not finance local clean-ups (country clean-ups) nor organize them. Let's Do It! World offers know how and support.

The support is following:
1) The team of Regional Coordinators to keep the teams connected to the global aim and advise the local teams:
   http://www.letsdoitworld.org/team/regional-coordinators
   The team consists of volunteers. Each country is responsible in creating a local structure.
2) The team of Communication and Marketing to support with guidelines, consultation, PR-tools, regional and global communication.
   http://www.letsdoitworld.org/team/communication.
   The team consists of volunteers. Each country is responsible in creating a local structure and communication plan. However, videos, photos, global press releases, newsletters, information lists, discussion groups, design samples, etc. are provided to make starting a campaign as easy as possible. The team also organizes global campaigns to inspire new activists to join the movement and start massive clean-up actions. Promotion materials and other support guidelines are public for all people and organizations interested: http://www.letsdoitworld.org/join
3) The team of IT and development supports teams with e-mails, know-how, waste mapping apps and other innovations:
   http://www.letsdoitworld.org/more-about-mapping
4) The team of Partners and Finance. Supporting the global movement with providing mainly in-kide help through partner organizations. Seeking for funding and finances.
5) The knowledge team. Gathering information and statistics from different regions in the world to better understand the illegal waste problem, success stories, global trends, etc.

Engaging the public consists in (example of Estonia's action in 2008, model very similar in other countries):

1) For the first step, a team compromising of top professionals in their field was assembled, eventually growing into 620 people.
2) Then, the team reached out to people, NGOs, municipalities, politicians and opinion leaders, gathering eventually over 500 partners. Even the President of Estonia supported the project.
3) The third step was to locate the illegal trash sites and estimate the type and amount of garbage. Therefore, a virtual garbage map was developed. The free waste mapping application enabled people to hunt down the trash points, upload the location and data using Google Earth software.
4) Additionally, a massive communication campaign was organised. Well known Estonian actors, musicians and cultural leaders gave their support for the action.

The main challenges are:
- the movement is international and that creates communication difficulties
- the awareness in most countries is low, also globally low
- the movement is based on volunteering and this creates challenge with human resources (volunteers engaged full time somewhere else)
- the trash problem is rapidly growing in all countries (overproducing, poor waste management, illegal trash in the nature, spreading of diseases, social problems, etc.) – time pressure to solve the problem

However, with the cooperation of existing partners and a strong mission, Let's Do It! World has grown rapidly despite the challenges. The idea and the model has been working in most countries, the model is possible even in developing countries (Albania, Kosovo, Moldova, Ukraine, etc.) and has been proven to be rather successful.

The model of Let's Do It!:

1) Civic led
2) Cleaning up the entire county in one day with massive amount of volunteers (aiming 5% of the population)
3) Engaging many partners and social groups from different background

4) Focusing on solutions, not accusations
5) Building a massive communication campaign to raise awareness

The global model works as following:
- Step 1: Inspiring and involving groups, organizations and activist to organize a country clean-up
- Step 2: Consulting, training, supporting the core team
- Step 3: Empowering the success in the global network, communications support
- Step 4: Gathering feedback and success stories to apply as inspiration mechanism for other regions/countries
- Step 5: Involving countries that have organised mass clean-ups as key players for spreading the know-how

This is a very generalized description; the methods and mechanisms also vary from country to country.

Results

Let's Do It! World project is not over yet. However, in the countries, which have organized massive clean-up actions together with an awareness campaign, have witnessed following outcomes (simplified overview):

1) Estonia, Latvia, Lithuania, Slovenia. Rapid shift in awareness. Rapid reducing of illegal dumping. The problem has not reoccurred and the countries have remained clean. All countries are taking steps to improve waste management and move (different phases in different countries) towards circular economy and zero waste models. In Estonia, by the European polls, people are most likely to become volunteers for an environment related actions. Eexceptional compared to other countries.
2) Developing countries creating new environment protection and civic society legislation to support the area.

Kosovo, Romania, Albania, Ukraine Bulgaria, etc. have witnessed an activating civic society. In all of these countries, the Let's Do It! movement is the most massive civic movement. In several countries, there were no local ac-

tive civic movements (that would be known by the wider public) before. Albania used to have Europe's lowest volunteering engagement but now brings yearly out over 140,000 volunteers that voluntarily clean up illegal waste. New legislation creating has speed up, the government institutions work side by side with the movement. Environment and trash, which were not a priority before, have become a priority thanks to a very visual campaign.

In all countries, where the massive actions have been organized, media follows the events very actively. In many of these countries, Let's Do It! is the most known civic campaign and in few countries, among the most known brands in the country in general.

In all countries, it brings along a public debate about civic responsibility, clean environment, social inclusion and national pride (are we proud to live in a country that's filled with illegal waste? do we keep our own safe and healthy?) It has been strengthening ties between communities. In many countries, new initiatives and NGOs have born from Let's Do It! groups.

In all countries, it brings along a public debate about civic responsibility, clean environment, social inclusion and national pride (are we proud to live in a country that's filled with illegal waste? do we keep our own home safe and healthy?) It has been strengthening ties between communities. In many countries, new initiatives and NGOs have born from Let's Do It! groups.

In Estonia, in Latvia and in Lithuania, the yearly Let's Do It! actions still take place, even though there is no need for a mass clean-up. The event has transformed into a community action day, bringing people together for doing different kind of jobs to improve the public (building, planting trees and flowers, renovating, discussions, seminars, nature conservation actions, volunteering for animal shelters, etc.). In Slovenia, clean-ups are no longer organized and the team is working on developing the Slovenia into a zero waste country. The capital of Ljubljana has stated that they will take concrete steps to become a zero waste city. That would be the first capital city in the world to do so.

Advantages

Let's Do It! World has several advantages:

1) Attractive to the media media & simple to take part in
2) Strengthening the civic society
3) Improving the environment
4) Supporting cooperation
5) Giving individuals the belief that they matter and they can improve their society

The model is built in a way that the teams work all around the country having their own local volunteer leaders. This makes the movement possible everywhere. Centrally organized actions in big countries would not work. Let's Do It! works also in micro level, with networking and team building.

As Let's Do It! World started as a movement, it has flexibility and personal approach. However, it's been run by capable professionals in different countries, which also bring along a working structure. Waste collection and management demands good logistical skills and with proper partners and skills, massive Let's Do It! actions have proven to be capable of organizing such logistics (transportation, people, etc.).

Let's Do It! World has been covered by local and international media. Short documentary TV-shows have been created about the action (for ARTE, national public broadcasting channels, BBC, etc.) and the movement has been also covered by Huffington Post, The Economist, AFTP, etc. Currently, a full length documentary film is being filmed about the Let's Do It! Mediterranean action.

Obstacles

Main objectives are low awareness and cooperation by the decision makers. In some countries, corruption is a big problem. However, the first objective can be overcome by right approach and communication. Depending on the country's democracy level, some initiatives have also faced limitations to organize massive clean-ups (as this is seen as national threat).

Let's Do It! Estonia faced scepticism that something like this could be done. This has been the case in all countries where successful massive clean-ups have organized. The approach was then made personal and a massive amount of partners were consulted. Engaging top professionals and honestly asking for help was the key to reduce fears and create trust.

We have not yet found the solution to overcome very non-democratic countries' obstacles. However, we believe Let's Do It! can be a positive peace-

ful way to improve several other issues in any country (as stated before, people coming together for a positive cause without accusing or pointing fingers will become empowered and new initiatives are often born out of such actions).

Innovative dimensions

The biggest innovation is the idea and the whole model – cleaning up one country in just one day. The other innovation is to go global with such initiative, modelling it to countries that are culturally and economically different, have different civic scene, traditions and patterns.

Important innovations are also waste mapping apps, logistical tools (waste pickup planning, etc.), that Let's Do It! World can also offer to its network. Waste mapping app was created by the team, led by Mr Ahti Heinla, one of the creators of Skype.

The social model is also unique. It's typical to involve youngsters to such actions. Let's Do It! is not determined to educate the young, but the whole society. Instead of simply addressing them and choosing messages, Let's Do It! engages the people and gives them responsibility. Let's Do It! model invites everyone to contribute, not simply follow and listen. This means, that one organization or few people are not taking the responsibility only and others can "enjoy the benefits" or criticize. Everybody is given chance to join teams and find a way to be useful. That is also very important before the actual clean-up day.

Orientation towards societal challenges

- Health, demographic change and wellbeing
- Food security, sustainable agriculture and forestry, marine and maritime and inland water research, and the Bioeconomy
- Secure, clean and efficient energy
- Smart, green and integrated transport
- Climate action, environment, resource efficiency and raw materials
- Europe in a changing world – inclusive, innovative and reflective societies
- Secure societies – protecting freedom and security of Europe and its citizens

The project is oriented towards:

1) Health, demographic change and wellbeing:
   Illegal trash is a cause of spreading of many diseases. It also brings along global warming problems, floods, air and food pollution. Burning illegal trash (problem in most countries) increases cancer rates and pollutes soil. Health of animals is also endangered because of illegal trash found in the mainland and in our oceans (entanglement, eating garbage pieces, toxins, etc.).

2) In many countries, Let's Do It! Works together with national state forest management centers. It's common, that illegal waste is found in forests. Cleaning up forests, beaches, riversides, etc. contributes in saving these areas. Toxins and trash particles endanger the whole ecosystem; from fish who eat micro plastic thinking it's plankton to people who eat fish.

5) Waste is directly connected with CEO2 emissions. Raising awareness, promoting circular economy and handling waste properly (rapid reduction of illegal waste) is supporting that area.

6) Estonia is a European country, which has tied civic leaders and initiatives with other European countries and promoting this model also in other continents. The first massive cleanups took place in Europe. European countries are examples and trend-setters and have inspired many other countries. For instance, Philippines are planning a one day Let's Do It! cleanup action for 20th of September 2015 with involving 5 million participants (ca 5% of the population). Kenya and Afghanistan have set a goal to involve million. Ukraine aims to bring together 5% of the population despite the war activity taking place in the country.

Similar initiatives
- GMO-free' initiatives (Latvia), 2010- (http://www.brivsnogmo.lv/english)
- Local resistance to the implementation of co-incineration, Portugal (Manuel Castelo Branco Teresa Eugénio João Ribeiro , (2008), "Environmental disclosure in response to public perception of environmental threats", Journal of Communication Management, Vol. 12 Iss. 2 pp. 136 – 15)

Public Consultation

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DEEPEN Project

The DEEPEN initiative was set up to help provide solutions to a key governance dilemma: how to govern a new domain of science (nanotechnology) under conditions of uncertainty in such a way as to enhance innovation, but to remain sensitive to public concerns in a cross-European context. Through a number of key engagements, an 'upstream' methodology and theoretical innovations, the project promoted the 'responsible development' of nanotechnology and functioned as a significant resource for European public policy processes.

Context

Decisions about the funding of large research projects in science and technology are normally made on the basis of scientific excellence, as assessed by peer review, and the potential value to business or the nation of the results of the research. A third consideration, the societal acceptability of the proposed research, has often received less or no attention. This neglect has sometimes led to projects becoming controversial, with public disquiet fanned by media reporting and local or national NGO campaigns. An obvious recent example in the UK is trials of genetically-modified crops. Controversies have led major funding agencies to consider how their governance or procedures could be modified to take better account of possible societal concerns, both when making funding decisions and in what is expected of investigators once projects have been funded.

The DEEPEN initiative was set up to help provide solutions to a key governance dilemma: how to govern a new domain of science (nanotechnology) under conditions of uncertainty in such a way as to enhance innovation, but to remain sensitive to public concerns in a cross-European context.

Background information

Name: DEEPEN Project

Coordinator: Durham University

When: October 2006 – September 2009

Where: UK, Netherlands, Germany and Portugal

Who: Phil Macnaghten, Durham University

Additional information:
http://www.geography.dur.ac.uk/projects/deepen/

Initiative characteristics

PE category: Public Consultation

Mechanism: Focus groups, Forum Theatre

Main purpose of initiative: Consultation, dialogue/deliberation

Geographical scale: European

Organizing entity: Academic institution

Target groups: Lay publics, stakeholder groups, academic experts, public officials

H2020 Societal Grand Challenge(s):
- Climate action, environment, resource efficiency and raw materials;
- Europe in a changing world – inclusive, innovative and reflective societies

Durham University was the organising institution (led by Prof Phil Macnaghten) with Twente (led by Prof Arie Rip), Darmstadt (led by Prof Alfred Nordmann) and Coimbra (led by Dr Joao Nunes) as partner institutions.

The citizens were drawn from lay publics in the UK and Portugal, selected by professional recruiters. The project also included a wide range of national stakeholders (policymakers, civil society representatives, industrialists and nanoscientists), from across Europe but principally from the UK, the Netherlands and Portugal.

Aims and mechanisms

The project promoted the 'responsible development' of nanotechnology through a number of key engagements:

1) at the level of science – understanding how ethics and responsibility were understood within the nanoscience community and exploring ways to enhance ethical reflexivity;

2) at the level of publics – understanding how lay publics understand the social and ethical aspects of nanotechnology and developing methodologies aimed at better characterization of public views;

3) at the level of deliberation and multi-level governance – to bring together an inclusive array of stakeholders to determine whether new conversations could be generated aimed at developing recommendations on governance issues; and

4) at the level of philosophy – to thicken understanding of the ethics of nanotechnology informed by a deepened understanding of stakeholder and public views

The research questions underpinning the engagement of publics were as follows:

RQ1: What substantively are people concerned about when discussing emerging nanotechnologies? How are these concerns produced in and through interactive group discussion? What level of generality can be attributed to these matters of concern? To what extent are they shared across different kinds of publics and cultures? To what extent are they shared or not across different kinds of technologies?

RQ2: What narratives do people draw upon in responding to emerging technology? How do these emerge in relation to narratives currently populating public debate, including from media discourse, from civil society discourse and as well as from those reflecting dominant institutional scientific, corporate and policy discourse? How and at what level and with what epistemological and ontological significance can these narratives be codified? And can these be considered in some manner or form 'arche' or master narratives?

The methods employed involved a three-part methodology: an initial focus group where participants discussed their views on technology and where different frames of nanotechnology were introduced; a reconvened focus group a few days later where people discussed what they considered to be the key issues at stake and where they worked on the presentation of these issues in the form of a sketch; and later that day a theatre session in which one focus group presented their sketch to another. The methodology was informed by Augusto Boal's forum theatre in encouraging improvisation so as to give people the opportunity to explore different possibilities and scenarios. This research and similar studies were based on five key design principles.

First, given that by definition people are unfamiliar with emerging technologies and with the social issues they pose, the methodology is designed to elicit a contextual understanding of how people are likely to respond and the factors deemed most probable to shape future public responses. The focus on understanding context is a core element of the methodological design. In the DEEPEN project, this meant that experiences of current technology were a key feature of the opening discussion.

The second design feature concerns framing. Given that technologies are never neutral but always framed in particular ways and for particular purposes, care is exercised to ensure that the emerging technology under investigation is introduced through an inclusive range of rhetorical resources and frames without closing down or narrowing the issue, or presuming these align with dominant institutional frames and norms. Thus what are presented to participants are different frames or styles of thought not simply of what the technology is, but what it explains and what it represents. These

frames are encapsulated through the use of stimulus materials, typically making use of pre-designed large A1 boards, consisting of pictures and text (all attributed) and presented to the group by the moderator to stimulate conversation.

The third design consideration concerns the style and remit of the moderator. This role is considered integral to subsequent analysis and interpretation, and involves keeping the group on topic (using a well-formulated topic guide); listening empathetically and accurately to each participant's stories, ensuring a diversity of voice independent of background or experience; probing difference and convergence between group members; articulating shared issue definitions when present; and moving from one topic to the next only when the full range of arguments appears exhausted. To help ensure that the discussions are not framed by expert discourses and norms, none of the projects have included technical experts in the focus group discussions, as previous research has indicated that the presence of experts can induce deference to prior framings amongst lay participants.

The fourth design feature concerns sampling and group design. The research methodology uses sampling strategies that are both broad and theoretically-derived: participants are professionally recruited to cover a diverse variety of backgrounds, localities and demographics (e.g. age, gender, socioeconomic class) but with topic specific or theoretically informed variants: in the DEEPEN research this included participants who were early adapters of technology or individuals actively involved in their local community. The decision to involve uninformed participants, who have no particular a priori stake or position in the debate, and who do not know each other prior to the group, is a technique explicitly designed to produce an open-ended sociality, where people can develop opinions and attitudes through structured interactive conversation in a safe and empowering space.

Fifth, there is the matter of analysis and interpretation. Our approach was informed by traditions in discourse and narrative, in which the role of the analyst is first and most importantly to become acquainted with the raw data, to organise key rhetorical arguments into themes or discourses through the use of codes, to articulate the interplay between thematic concerns and wider social discourses, to identify how thematic concerns are

resourced by underlying cultural narratives and to interpret this meaning within a framework of theoretical and policy concerns. This process therefore enables an analysis of the narratives which underpin the deliberation in the focus groups, and which can be understood as enabling the articulation (and negotiation) of particular positions or views on (nano)-technology.

The public engagement methodology was carried out both in the UK and Portugal by respective DEEPEN partners. The Durham team was responsible for the focus group methodology while the Coimbra team was responsible for the theatrical performance-based sketches. The citizens were professionally recruited to precise criteria. Each citizen was paid a small incentive (of about £50 per session). The focus groups and performances were carried out in venues that included hotel meeting rooms, recruiters' homes and a university meeting room. The resources had been included in the DEEPEN budget. The methodology was an extension of previous work carried out by the DEEPEN coordinator (Phil Macnaghten). The DEEPEN team moderated the groups and were already skilled in utilizing the methodology.

Following the focus group/performance based research, the Durham DEEPEN team ran a deliberative event focusing on nanotechnology's responsible development over a day and a half. This included selected approx. 8 members of the focus group participants and a further 8 national stakeholder members, from the worlds of nanoscience, policy and civil society.

Results

The DEEPEN project played a key role in identifying why current approaches to the governance of emergent technologies are problematic. It has developed deliberative processes that aim to embed ethical and societal considerations throughout all stages of scientific practice. The DEEPEN project has informed European public policy debate about how research innovation might be governed responsibly. The initial pathway to impact was the DEEPEN end-of-award event in Brussels in September 2009. This involved speakers from seven European countries, officials from three European Commission directorates and two European government departments, and representatives from three industry associations and two civil society organ-

isations. DEEPEN's emphasis on deliberation and public engagement in the governance of new technologies informed the report Understanding Public Debate on Nanotechnologies: options for framing public policy (2010). This report was published by the Governance and Ethics Unit of the EC's Directorate General for Research & Innovation, which has a budget of €10 bn/yr. It aimed to stimulate public debate on the development of nanoscience and nanotechnologies. Its co-author (Rene Von Schomberg) states: "An EC publication of this nature is quite unusual" and further confirms that "DEEPEN helped the EC to reflect further on issues of responsible development of nanotechnology and to think about new ways of public engagement and further initiatives within and beyond the Science in Society programme".

The DEEPEN project further informed the development of the 'Responsible Innovation Framework' which has had a direct impact on UK EPSRC research policy. Following DEEPEN, the DEEPEN coordinator (Macnaghten; with Richard Owen) led the responsible innovation project to "help the research councils understand the broader context of responsible innovation and to develop a responsible innovation framework for implementation across the research councils". Testimony states that the [Responsible Innovation] project's findings had a "direct impact" and were "an integral factor" in shaping a set of specific recommendations for "implementing a responsible innovation approach". EPSRC has begun to implement the recommendations across its £800m/yr portfolio of funded research.

Advantages

The main advantages of the initiative were its

1) its demonstration of interdisciplinary in practice – inter alia, the project enabled a fruitful set of collaborations between philosophers (including ethicists), deliberation specialists, science and technology studies scholars and governance scholars all converging on the issue of how to understand the lay ethics of emerging nanotechnologies and their implications for governance.
2) Its reformulation of new research questions
3) Its reformulation of new governance framings

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Obstacles

The key obstacles included:

1) Keeping the interdisciplinary interaction productive, balancing power differences, and navigating the tension between partner autonomy and project obligations.
   This was managed by including 3-monthly all partner meetings (on the original proposal we have specified only 6-monthly meetings) and instigating in addition regular bi-partner meetings both to co-develop research design and to witness each other's project-based activities.

2) Engaging with ongoing policy and science policy developments at the European Commission.
   This was managed by maintaining good and ongoing relations with the DEEPEN project officer (Rene Von Schomberg) and responding proactively to Commission invitations.

3) (for the coordinator) maintaining balance between DEEPEN commitments and other regular teaching, administration and research commitments.
   This was successfully managed (towards the end of the project) when an incoming PVC Research at Durham understood the strategic importance of the project both in its own terms and for Durham.

Innovative dimensions

The project was initiative in three respects:

1) its methodology – inter alia, the project developed a coherent and robust 'upstream' methodology in which lay participants could discuss the social and ethical dimensions of a technology at an early stage. It demonstrated that conversations of this kind were possible and that the subsequent framing of 'public concerns' were often somewhat radically at odds with dominant institutional, industrial and regulatory framings of the issues at stake. In particular, it suggested that the assumption that public acceptability to emerging (nano)technology depends on how people weigh up risks and benefits or that assume that people are either

'pro' or 'anti' a particular technology is flawed. Instead, the DEEPEN findings show that all emerging technology is perceived to involve risk and uncertainty, and indeed that perceived 'benefits' may turn out not to be beneficial at all.

2) its theoretical innovation – the DEEPEN research explored the stories that people draw upon in responding to emerging technologies, and how such concerns are resourced through a set number of key narratives. These narratives operate as resources that are deployed in a dialogic and interactive struggle towards a collective vocabulary to render novel science and technology culturally meaningful. The DEEPEN research not only identify the prevalence of 5 key structuring narratives – these were the 'Be careful what you wish for' narrative; the Pandora's Box narrative; the 'Messing with nature' narrative; the 'Kept in the dark' narrative; and the 'rich get richer' narrative – but also identified their provenance as a reaction to a dominant, neoliberal politics of technoscience which continually limits public involvement in societal agenda setting (the question: what kind of future do we want?) to the role of the consumer. These narratives are called forth, in other words, by policy logics that emphasise inevitable technological progress and associated social gains – without any space for questioning the nature and reality of either the progress or the social effects.

Orientation towards societal challenges

- Health, demographic change and wellbeing
- Food security, sustainable agriculture and forestry, marine and maritime and inland water research, and the Bioeconomy
- Secure, clean and efficient energy
- Smart, green and integrated transport
- Climate action, environment, resource efficiency and raw materials
- Europe in a changing world – inclusive, innovative and reflective societies
- Secure societies – protecting freedom and security of Europe and its citizens

The initiative is relevant to all the societal challenges as specified under Horizon 2020 but at perhaps a deeper level than specified in current policy prerogatives. The DEEPEN research point to a different politics of technology premised on a deeper understanding of public concerns to science and technology (which will be necessary to address for all the societal challenges listed above).

Traditional approaches to governance have tended to rely on the dominant progress narrative to presume that a technology should be permitted onto the marketplace in the absence of evidence to harm (to human health and the environment), and so long as it does not violate basic ethical principles (such as privacy, liberty, freedom of expression and autonomy). But the public narratives the DEEPEN research have described transcend questions of technical risk, and are only imperfectly captured in the language of basic ethical principles.

In relation to EC programmes of responsible innovation, we suggest four spheres of intersection. First, in initiatives aimed at enhancing anticipatory governance, our approach points to the need for greater sensitivity to the narrative pathways through which emerging technology might plausibly lead to ills and harms: through its motivation to introduce seductive but false pleasures, through its transgression of moral boundaries and orders, through its unequal distribution of benefits and through innovations that do not offer genuine public involvement. Second, in relation to initiatives aimed at inclusive public engagement, our approach offers a way of understanding both the materiality of public concerns and their mediation through underpinning narratives. Understanding how concerns are mediated both by different cultural narratives (both large and small) in a cross-cultural perspective, and, in addition, by the specific social constitutions of different emerging technologies is a necessary element of future inquiry. Third, in relation to initiatives aimed at enhancing scientific reflexivity, our approach points to the need to introduce reflexivity at the level of ontology and meaning: to help scientists and innovators understand how tacit assumptions of nature and social progress, often embedded in dominant scientific and policy discourse, may be radically at odds with wider public sentiment. Finally, in developing institutional responsiveness, our approach necessitates the need for new kinds of responsive capacities in the science policy and regulatory regime, very possibly requiring institutional redesign, that consider the broader cultural, societal and ethical dimensions of emerging technologies and that are equipped to help institutions change shape or direction in response to improved anticipation, inclusion and reflexivity.

Similar initiatives
- Cardboard Citizens (forum theater), 1991 – (http://cardboardcitizens.org.uk/)
- NANOCODE – A multistakeholder dialogue providing inputs to implement the European Code of Conduct for Nanosciences & Nanotechnologies (N&N) research, 2010–2011 (http://cordis.europa.eu/result/rcn/91262_en.html)
- See also VOICES in this catalogue

Flemish Science Shops

The Flemish Science Shop network was officially launched in 2006 and since then, the Brussels and Antwerp Science Shops have been cooperating with hundreds of CSOs and have delivered over 200 research reports as answers to their societal relevant research questions. By moving dialogues between researchers and civil society "upstream", in developing proposals for new research and innovation directions, science shops promote civic engagement, knowledge transfer, and university – civil society relations.

Context

In 2002 awareness was raised for community based research in Flanders thanks to the attention of the European Commission for the Science Shop concept. A member of Parliament urged the universities to bridge the gap between universities and the community through Science Shops. As a result, the Vrije Universiteit Brussel (VUB) and the Universiteit Antwerpen (UAntwerpen) introduced a common pilot project to find out what kind of Science Shop model would work in Flanders. The Flemish government gave the two universities three years to determine the best possible integration of community based research into the Flemish universities. For this reason, a small network of two Science Shops (one in Brussels, one in Antwerp), coordinated by a central unit in Brussels, was established. After this successful pilot project, the Flemish Science Shop network was officially launched in 2006. Today, the Brussels and the Antwerp Science Shops are still active and are funded by their hosting universities and a project grant from the Flemish ministry of Economy, Science and Innovation.

Background information

Name: Flemish Science Shops

Organizer: Vrije Universiteit Brussel and Universiteit Antwerpen

When: 2003 – Ongoing

Where: Brussels and Antwerp

Who: Jozefien De Marrée, Vrije Universiteit Brussel

Additional information: www.vub.ac.be/wetenschapswinkel

Initiative characteristics

PE category: Public Consultation

Mechanism: Science shops

Main purpose of initiative: Awareness raising, consultation, knowledge transference, research agenda setting

Geographical scale: Regional

Organizing entity: Academic Institution

Target groups: Academic institutions, CSO's

H2020 Societal Grand Challenge(s):
- Health, demographic change and wellbeing;
- Europe in a changing world – inclusive, innovative and reflective societies;
- Secure societies – protecting freedom and security of Europe and its citizens

Aims and mechanisms

At a Science Shop, students do research on behalf of an organization. Through matching science with society, civil society organisations (CSOs) get objective, scientifically correct and personalized academic input into their work, while students and their supervisors contribute to research that is particularly relevant and in touch with society's needs. In that way, Science Shops help the researchers to show interest in the topics that touch the communities and help those communities to obtain objective scientific answers or solutions to local problems or basic society-based problems. This increases civic engagement in the agenda-setting of research topics (community as starting point for research) so they can have access to knowledge & research results that concerns them. Furthermore, the community can use the research results to position them in this new knowledge society. At the same time, the involved student-researchers gain working experience and build up a network in their field of expertise.

CSOs that do not have the necessary funding and expertise to perform their own research are invited to submit their research topics at the Flemish Science Shops. If topics are approved by the Science Shop advisory board as both scientifically and socially interesting and useful (mainly master) thesis topics, they are published in a public Science Shop database. If students show interest in certain topics, the Science Shops acts as a mediator between CSO, supervisor and student. As an official starting point of the research process, the Science Shop organizes a starting meeting with all involved parties, to decide on the research design, tune expectations and to plan the research. During the research process, the student is supervised by a senior professor and can count on input from the CSO: working experience, contact details to perform interviews or surveys, literature, data to analyse etc. In case problems arise, the Science Shop acts as a mediator between all parties.

Once the student has finished his/her research, has passed and both supervisor and CSO are satisfied with the study and results, the Science Shop encourages all actions, measures, events etc. based on the results. In that way, the research is literally used instead of gathering dust in a library shelf.

The study itself is also published on the Science Shop website, so similar CSOs can also use the results, in order to gain maximal impact.

Since CSOs aren't usually able to pay for research, the cost of a Science Shop study is kept as low as possible. It's possible that the CSO pays for the cost of printing of questionnaires or transport for interviews. Given that students have to make a thesis anyway, the student is not paid for his or her research.

In short: The main tasks of the Science Shops are to assemble questions from CSOs, translate a question into a research question and act as a mediator between the organization and the researcher and assist in bringing research results under the attention of the wider public. At the moment, all of the research is conducted in the form of a master thesis, mainly in social sciences as educational sciences, psychology, communication sciences and (medical) sociology.

Results

After a decade, the Brussels and Antwerp Science Shops have been cooperating with hundreds of CSOs and have delivered over 200 research reports as answers to their societal relevant research questions. After each case, the research process and results are evaluated by the involved CSO. In the most successful cases, Science Shop studies lead to organizational changes, policy impact, press coverage, workshops or other events etc. Similarly, during successful cases, students can take their first steps into their future work domain and extend their professional network, supporting their cv. At the same time, the involved supervisors get to know the field they are researching and interact with the CSOs.

From 2005 until 2008, the Brussels Science Shop was involved in the successful European FP6 project TRAMS "Training and Mentoring of Science Shops". Subsequently, from 2010 until 2014, it was involved in the FP7 project PERARES, "Public Engagement with Research And Research Engagement with Society" and from July 2015 until December 2017, the Brussels Science Shop will coordinate a H2020 Science With And For Society project on Enhancing Responsible Research and Innovation in Curricula

of Higher Education (EnRRICH). These European activities do not only generate additional Science Shop budget but also support the daily Science Shop work and inject new inspiration from e.g. foreign Science Shops. This international network is also supported by membership of the international Science Shop network, Living Knowledge, and the Dutch and Belgian Science Shops network.

Advantages

A Science Shop is easy accessible and necessary for the community:

- Science Shops raise awareness with researchers of the topics;
- Science Shops help communities to obtain objective scientific answers or solutions to local problems or basic society-based problems;
- Research-based answers to societal questions help the community with critical reflections;
- Increases civic engagement in the agenda setting of research topics (community as a starting point for research) so they can have access to knowledge & research results that concern them;
- Communities can use the research results to position them in this new knowledge society

Moreover, a Science Shop fits perfectly into the structure of a university. In general, Flemish universities have three responsibilities related to governmental funding: research, education and societal services. Situated in the latter, Science Shops offer universities an easy way to share knowledge with society. Finally, the integration into the structure of a university can take place with a minimum of expenses because there is a large potential of research. Master students have to write a thesis anyway, so why not consider societal relevant research for a CSO?

As mentioned before, on a more individual level, both involved student and supervisor can also take advantage of Science Shop cooperation. Besides getting access to information, data and experience on their research topic, they also strengthen and extend their professional network and – mainly in case of the student– extend their competences.

Obstacles

In times of economic crisis, student research in response to CSO requests is not a high-level priority both in public and university policy. The establishment of a Science Shop highly depends on support from higher university levels and staff or policy changes can have serious implications for the Science Shop continuity. Since most CSOs don't have access to research funding, Science Shops highly depend on the university budget or project grants. Continuous lobbying, European project participation and positive media coverage are potential ways to deal with this risk.

Likewise, it is not always easy to match supervisors with societal research topics coming from CSOs. Serving as a thesis topic, such a research question should contain both a literature and empirical part. Moreover, in case the research topic doesn't coincide with the expertise or a researcher, supervisors may be more eager to supervise theses focusing on their own research lines. The Science Shop advisory board can prevent this conflict of interest in an early stage, through strong interaction and good agreements between student, CSO and supervisor during the start meeting and mediation by the Science Shop can help in a later stage.

Due to the academic year and students' interests, it can't be foreseen when a research question will be answered, neither if the answer will be of high quality. As Science Shops work with students who aren't paid for their work, we can't guarantee a finished study to the CSOs. On the other hand, both supervisor and Science Shop mediators try to support the student as much as possible. Similarly, support from the CSO also means that the student has access to certain sources of information that wouldn't be available outside the Science Shop mechanism.

Innovative dimensions

The time has come to recognize civil society as a producer of knowledge, and to accept CSOs as partners in research and innovation directed towards public interest, but also have civil society's own activities recognized as research and innovation. Science Shops act as unique entrance gate for civil society to academic research.

Researchers and students can be exposed to societal perspectives of research and innovation by integrating engagement with societal actors into university curricula and into research. Science Shops deliver structures for partnerships between researchers and societal actors as part of research activities, including as part of research planning. In this way, Science Shops move dialogues between researchers and civil society "upstream" and develop proposals for which direction new research and innovation activities and programs should take.

Moreover, during a Science Shop case, students get in touch with 'the real world' while delivering scientifically correct and useful information for a CSO.

Orientation towards societal challenges

- Health, demographic change and wellbeing
- Food security, sustainable agriculture and forestry, marine and maritime and inland water research, and the Bioeconomy
- Secure, clean and efficient energy
- Smart, green and integrated transport
- Climate action, environment, resource efficiency and raw materials
- Europe in a changing world – inclusive, innovative and reflective societies
- Secure societies – protecting freedom and security of Europe and its citizens

As the research topic depends on the CSO and its research question, but also on the student's education, all societal challenges can be addressed, in different ways. Given the Flemish Science Shop's focus on social sciences, most research projects are situated in 1) Health, demographic change and wellbeing, 6) Europe in a changing world – inclusive, innovative and reflective societies and 7) Secure societies – protecting freedom and security of Europe and its citizens. Moreover, the Science Shop way of work, perfectly fits within the separate 'Science With And For Society' or SWAFS program of Horizon 2020, focusing on building effective cooperation between sci-

ence and society, recruiting new talent for science and pairing scientific excellence with social awareness and responsibility. This SWAFS program and the previous Science And Society (FP6) and Science In Society (FP7) ones, also offer(ed) the frames for the European activities of the Flemish Science Shops. As mentioned before, the Brussels Science Shop will coordinate a H2020 SWAFS project on Enhancing Responsible Research and Innovation in Curricula of Higher Education (EnRRICH).

Similar initiatives
- Science shops, Germany (e.g. Wissenschaftsladen in Bonn (http://www.wilabonn.de) and in Hannover (http://www.wissenschaftsladen-hannover.de)
- See also PERARES in this catalogue

RESEARCH 2015

The main aim of RESEARCH 2015 was to identify future research areas in the Danish context in order to increase a systematic and robust basis for the prioritisation and allocation of strategic research funds. The horizontal dialogue-based and challenge-driven approach promoted a wider debate on the need and use of research in Denmark. The project had a substantial impact on political decision-making concerning allocation of the share of research funds dedicated to specific areas of societal interest.

Context

With increased spending in research and development the last 10–15 years more funds were allocated to political prioritized areas of societal interest (strategic research funds). The development creating a need for a robust basis for prioritization of the funds. The overall challenge was to ensure that strategic research funds were allocated toward social challenges or areas that support growth and development. The project was organized by the Ministry of Science, Technology and Innovation. The aim was to map the needs created by societal and business development. Central stakeholders (e.g. business and interest organizations, unions, research councils, universities and ministries and agencies) were invited to participate and an open web-based call was launched to encourage public participation.

Aims and mechanisms

The aim was better policies (e.g. creating a better foundation for prioritisation of research funds). However the project also had elements of knowledge co-production (agreeing on what challenges to focus on) and democratization (clear line from prioritisation to allocation of funds).

Background information

Name: RESEARCH2015

Organizer: Ministry for Science, Technology and Innovation

When: January 2007 – June 2008

Where: Denmark

Who: Anders Hoff, Ministry of Higher Education and Science

Additional information: http://ufm.dk/en/research-and-innovation/political-priority-areas/research2020/research-2015

Initiative characteristics

PE category: Public Consultation

Mechanism: Foresight panel

Main purpose of initiative: Consultation, debate, knowledge co-production

Geographical scale: National

Organizing entity: National governmental body

Target groups: Stakeholder groups, experts, lay publics

H2020 Societal Grand Challenge(s): All seven

The project was organized in three steps:

Phase 1: Mapping of research needs, March – October 2007

The point of departure for the RESEARCH2015 catalogue is a broad mapping of the strategic research needs created by societal and business development. The OECD initially conducted an international horizon scan of recent expert reports and analyses, international think tanks and technological foresight, and international and national reports, strategies and action programmes. The horizon scan resulted in 125 suggestions for important development trends and societal challenges and functions as the foundation and inspiration for the next step in the mapping process. This step consisted in a public internet hearing where everyone could identify important research needs and themes in Denmark. The hearing resulted in a further 366 proposals from the general public, companies, researchers, universities and organisations.

Phase 2: Identification of themes, November – December 2007

In phase 2 the independent team of experts analysed the proposals received and the OECD horizon scan. On the basis of this extensive material, the group identified 42 proposals for strategic research themes, which formed the starting point of a workshop with a user panel consisting of representatives from trade and industry, the public sector and civil society. Taking their point of departure in the many inputs and ideas from the workshop, the team of experts completed their final proposal for a total of 31 strategic research themes just before the end of 2007.

Phase 3: The final proposal, January – April 2008

In phase 3 the team of experts' proposal formed the starting point of intensive dialogue with organisations, ministries and research councils. The dialogue resulted in the 21 proposals for strategic research themes that are contained in the final catalogue. At a concluding workshop, the Danish Councils for Independent Research contributed to the assessment of the qualifications of the Danish research environments for conducting a research effort within each of the themes.
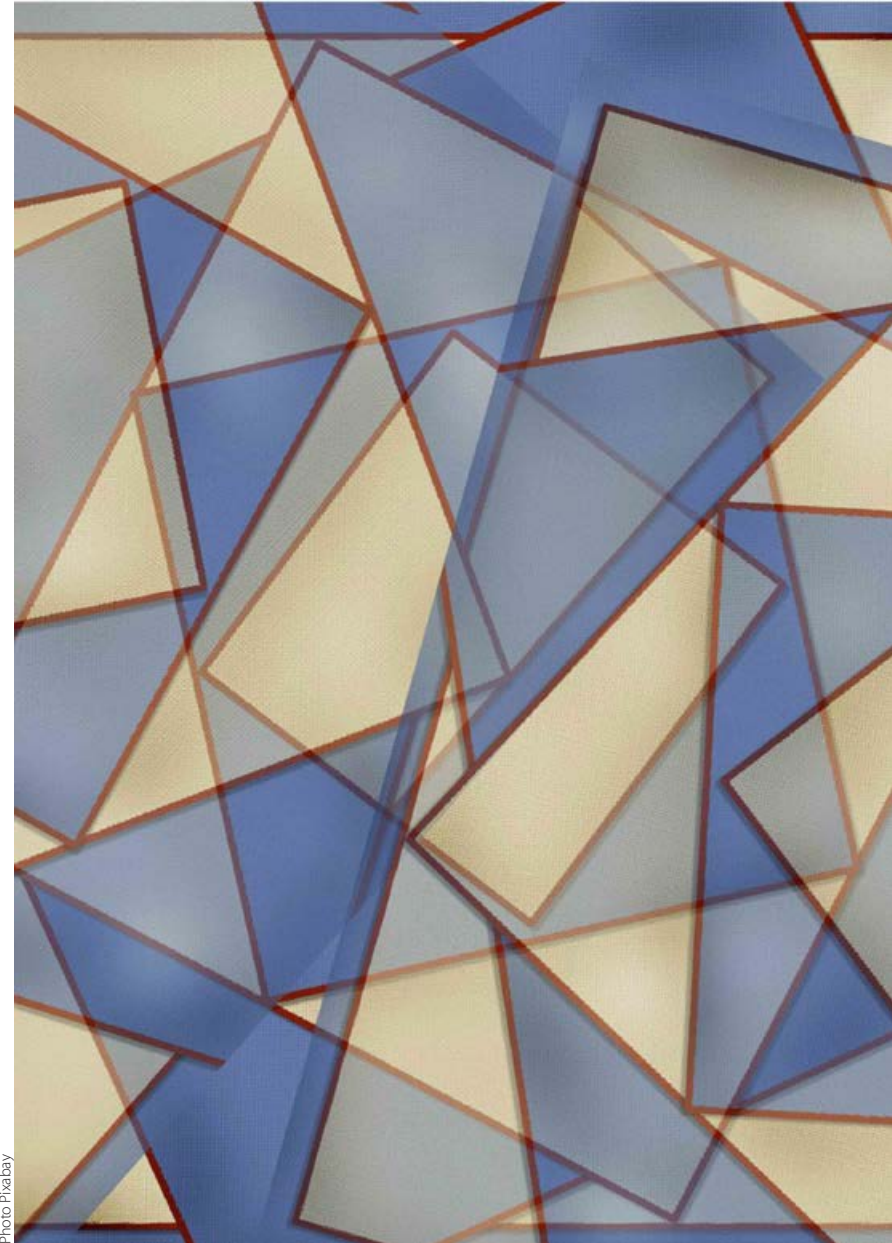

Photo Pixabay

Results

The project had a substantial impact on political decision-making concerning allocation of the share of research funds dedicated to specific areas of societal interest due to the direct link between mandate for the project and use of the project. The process was successful in creating a level playground for deliberation and "picking" challenges that demand a targeted research effort. The project has also promoted a more "challenges-driven" and strategical understanding in Danish research institutions thus moving focus from "picking the winner" to "picking the challenge".

Advantages

The project was based on the idea that long(er) deliberation lead to short(er) implementation. Thus a high level of inclusion in the creating of the prioritization catalogue has led to a higher degree of consensus concerning the allocation of the funds.

Obstacles

At the time the idea of an extended hearing process as a basis for prioritization of research funds was new and it was difficult for the established political and administrative system to understand the need to withhold the need to make quick decisions. However due to initial political agreement that a basis for prioritization was needed the project did not suffer. A huge part of the success was due to the fact that the mandate for the project was clearly stipulated.

Innovative dimensions

The horizontal dialogue-based approach to identifying the societal challenges was new. Thus the challenge-driven approach promoted a wider debate on the need and use of research in Denmark. Engaging and simulating a public debate on research and in the end also public support to massive investment in research and development.

Orientation towards societal challenges

- Health, demographic change and wellbeing
- Food security, sustainable agriculture and forestry, marine and maritime and inland water research, and the Bioeconomy
- Secure, clean and efficient energy
- Smart, green and integrated transport
- Climate action, environment, resource efficiency and raw materials
- Europe in a changing world – inclusive, innovative and reflective societies
- Secure societies – protecting freedom and security of Europe and its citizens

The aim of the Reseach2020-project is to identify promising research areas horizontally. E.g. the process goes before identifying the societal challenges stipulated in Horizon 2020.

Similar initiatives
- Citizens' Agenda on Science and Innovation 2010, Spain (http://www.efc.be/programmes_services/resources/Documents/dossier%20prensa%20Agenda_en.pdf)
- Foresight rounds', how Iceland should look like in 2020, 2007 (Monitoring Policy and Research Activities on Science in Society in Europe (MASIS), National Report, Iceland, 2011, http://www.morri.res-agora.eu/uploads/1/MASIS_Iceland.pdf)
- "Futur" research dialogue, 2001–2005, Germany (http://www.bmbf.de/en/12687.php?hilite=futur)

iSPEX

The iSPEX project originally aimed to generate public awareness on atmospheric science but after the breakthrough of a low-cost smartphone add-on allowing citizens to measure air quality with their smartphones, iSPEX has turned into a large-scale citizen science project. The project has managed to collect massive data on air quality and has an impact on public awareness of air quality. The project has furthermore generated extensive media attention as well as raised awareness with decision-makers.

Context

It kind of started as a joke: on a Friday afternoon we discovered that the air quality measurement principle that we were developing for a satellite also worked on a smartphone. Then we had MSc students (of astronomy) build first prototypes. We created an ad-hoc consortium and participated in the "Academic Year Prize" 2012, a contest for communicating science with the public. We won the main prize of 100 k€, which allowed us to organize the first iSPEX measurement days in the Netherlands in 2013.

We collaborated with societal partners like the "Longfonds" foundation for lung disease patients, and a popular science magazine. Also, our idea generated a lot of media attention from the start, which allowed us to recruit ~7000 participants in the Netherlands.

Target audience was basically anybody with an iPhone in the Netherlands…

In 2013 we had to wait for quite a long time for the necessary cloud-free day. On July 8 2013 we could finally organize the first measurement day which yielded 6007 measurements. Several thousand spontaneous measurements were submitted in the days after. On September 5, we organized the second official measurement day.

Background information

Name: iSPEX project

Organizer: iSPEX consortium: Leiden University, NOVA Netherlands Research School for Astronomy, SRON Netherlands Institute for Space Research, KNMI Royal Netherlands Meteorological Institute, RIVM, Netherlands Institute for Health and the Environment

When: January 2013 – Ongoing (with the first pan-European measurement campaign in Sep 2015)

Where: Netherlands, currently expanding internationally

Who: Frans Snik, Leiden University

Additional information: www.ispex.nl

Initiative characteristics

PE category: Public Consultation

Mechanism: Crowdsourcing (citizen science)

Main purpose of initiative: Awareness raising, consultation, co-production of knowledge

Geographical scale: National

Organizing entity: Academic institution

Target groups: Lay publics

H2020 Societal Grand Challenge(s):
- Health, demographic change and wellbeing;
- Smart, green and integrated transport;
- Climate action, environment, resource efficiency and raw materials;
- Europe in a changing world – inclusive, innovative and reflective societies

Aims and mechanisms

At first: generating awareness about atmospheric science, and promoting our new measurement principle. But it became more than that. The most important aspect is really the active citizen science: participants can significantly contribute to scientific knowledge by going out and performing formalized measurements with their smartphones.

The breakthrough was the development of a low-cost smartphone add-on that could be used for atmospheric scientific measurements. Most participants ordered the add-ons through our website, and paid a small amount of money for this (heavily reduced price through sponsoring). We also handed out add-ons at public science events etc.

After that, communication with the participants through email, social media, and the dedicated iSPEX app. Participants received an announcement of a measurement day at least a day ahead, with a request to perform at least one measurement, with an indication of the preferred time slot. Participants can (and will) measure wherever they want. This automatically creates a nice spread across the entire country. The largest measurement densities occur in cities. This is also exactly what we need, because there the situation regarding sources of pollution is more complex, and the large measurement density permits a higher spatial resolution of the final result, as averaging over many measurements is required to obtain sufficient accuracy.

Largest challenges: dependency on cloud-free weather, (for now) limited to iPhone 4(S) and 5(S).

Largest surprise: the participants are very excited to go out and perform these complex measurements!

Results

First results published (open access) in prestigious journal Geophysical Research Letters: Snik et al. GRL 41(20), 7351 (2014) (http://onlinelibrary.wiley.com/doi/10.1002/2014GL061462/abstract)

We received lots of attention from media and scientists, nationally and internationally. Our project was discussed in Dutch parliament, as a prime example of active participation of citizens in air quality measurements. We are currently making plans to expand to at least European scales (in the context of the International Year of Light 2015).

Advantages

Our main general conclusion of our first experiments is that both smartphones and citizens are ready for this.

We are making use of virtually all the high-tech sensors of smartphones: camera, GPS, compass, inclinometers, CPU, internet connectivity. And as smartphones are pretty much ubiquitous, we need to smart making use of this sensor platform. It allows us to gather data at locations and at times that can never be sampled by professional equipment, because resources for that are always limited.

But most importantly, we notice that participants really want to participate in the scientific process. In some cases just because it's cool, but in other cases also because people are worried about the environment or health impacts of air pollution and they want to do something about it.

Obstacles

At first, we noticed some conservatism here and there. But after the first measurement day, the idea of the citizen participation was soon embraced. It was then apparent that such initiatives are complementary to the professional networks, and moreover, they are valuable for communicating the scientific needs for such measurements.

We are now trying to take the next steps of creating a more permanent and international iSPEX citizen science measurement network, and that is an organizational challenge indeed. But it mostly requires funding.

Innovative dimensions

We think that iSPEX was the first active citizen science project that succeeded on such a large scale: several thousand participants carrying out complex outdoors measurements with their smartphones at roughly the same time. The most important result is that we have shown that even the moderately accurate iSPEX smartphone data can be averaged to sufficient accuracy, which cannot be obtained in any other realistic way.

Orientation towards societal challenges

- Health, demographic change and wellbeing
- Food security, sustainable agriculture and forestry, marine and maritime and inland water research, and the Bioeconomy
- Secure, clean and efficient energy
- Smart, green and integrated transport
- Climate action, environment, resource efficiency and raw materials
- Europe in a changing world – inclusive, innovative and reflective societies
- Secure societies – protecting freedom and security of Europe and its citizens

Still much is unknown about atmospheric aerosols:
They reduce our life expectancy by up to two years, but the exact mechanisms are still to be determined. For this, we need to add information about particle size and composition, and link it to specific sources.

Atmospheric aerosols constitute the largest source of uncertainty in climate change modelling. Again, we need to measure particle properties, to figure out whether to heat or cool our atmosphere, and how they modify cloud formation.

In the form of volcanic ash clouds, they affect air traffic. We need more measurements to be able to reroute flights.

With iSPEX (and also our development of new professional measurement equipment, both on the ground and on satellites) we want to address these issues.

Similar initiatives

- Natures notebook, US 2012 (Bowser, Anne & Shanley, Lea (2013): New Visions in Citizen Science. Washington, DC: Woodrow Wilson International Center for Scholars. Pp. 18–19)
- The Citizen Sense project, UK, 2013-2017 (http://www.citizensense.net/)
- NoiseTube project 2008 – (http://www.noisetube.net)

PERARES
- Public Engagement with Research and Research engagement with Society

The PERARES project aims to strengthen interaction in formulating research agendas between researchers and Civil Society Organisations (CSOs) at the level of research organisations and at a regional and trans-national level. A range of activities, such as a transnational web portal, have been launched to interlink dialogues and co-creative research in an 'upstream' manner in the agenda setting process. During the project, ten new Science Shop-like facilities have been established throughout Europe with the aim to mediate or perform research requested by Civil Society Organisations.

Context

Funded by EC-FP7-Science in Society Program in a call to structure public engagement with research (connecting various activities, such as dialogues on science and community-based research), in order to strengthen genuine engagement – engagement that would make a difference to research strategies. In fact, this was a pilot for the later MMLs (Mobilisation and Mutual Learning Networks).

The project was organised by a group of members of the Living Knowledge Network. The consortium consisted of universities (mostly represented by their Science Shops), CSOs (among which a number of independent Science Shops) and an SME operating a Science Shop as well.

The actual engagement activities included many civil society organisations who were involved in the research and/or setting the research questions.

Initiative characteristics

PE category: Public Consultation

Mechanism: Science shops

Main purpose of initiative: Consultation, dialogue, knowledge co-production, co-governance

Geographical scale: Europe

Organizing entity: International network of science shops

Target groups: Lay publics, CSO's, academic institutions

H2020 Societal Grand Challenge(s): All seven

Aims and mechanisms

PERARES aims to strengthen interaction in formulating research agendas between researchers and Civil Society Organisations (CSOs), at the level of research organisations (including Higher Education Institutes), and at regional and transnational / European levels.

PERARES uses a myriad of ways to achieve this general objective. In various formats, PERARES generates dialogues on science (including social science, engineering, technology etc.) to actively articulate research requests from civil society and its organisations. These are forwarded to research institutes, and research results are used in the next phase of the dialogue. Thus, these debates move 'upstream' into agenda setting. This means that the dialogues move beyond 'midstream modulation', (discussing on-going research), and participants will see more clearly what happens to the outcomes of these dialogues. Linking these two previously unconnected activities (dialogues and co-creative research) creates synergy.

As one way of achieving this joint agenda setting, partners have started a transnational web portal for dialogues leading to the articulation of research questions. This has been piloted in the area of nanotechnology, and then every few months a new dialogue started on a new area. Furthermore, the partners pilot and assess a range of forms of agenda-setting dialogue between researchers and CSOs, e.g. regular meetings over a long period of time (piloted in France and UK), and direct co-operation in two important social science fields: domestic violence issues (led from Belgium, UK and Norway) and Roma/Traveller's issues (started from Hungary, Spain and Ireland).

To strengthen local co-operation in setting research agenda's, and to be able to respond to more research requests internationally, it is necessary to enlarge and strengthen the network of research bodies doing research for/with CSOs. Thus, ten new Science Shop-like facilities throughout Europe are being established, mentored by experienced partners. Science Shops mediate or perform research on request by Civil Society Organisations; they are often part of a university, but can be stand-alone organisations as well (www.scienceshops.org).

Open training workshops are given as well. Science Shop-like work and Community Engagement of Higher Education Institutes are further advanced by partners conducting studies on good practices and policy making, to add to the available knowledge base. Guidelines to evaluate the engagement activities are developed and tested. The partners also investigate the potential role of higher education institutes and research funders in supporting co-operation with CSOs, by surveying research funders and monitoring a funded post-doc project. PERARES shares its activities with the wider community through two large conferences and on-going dissemination, through its website, annual magazine and quarterly newsletters, and by participating in relevant events and contacting relevant media.

Results

There has been a formal independent evaluation by University of Newcastle; this was very positive.

Outcomes:

Supporting new Science Shops:
The project kick-started Science Shop-like activities in 10 regions that did not yet have this kind of facility to perform civil society driven research. New Science Shop activities started in Dublin, Cambridge, Lyon, Grenoble, Sardegna, Israel, Cyprus, Crete, Estonia, and Stavanger. Many projects with students and CSOs were done and the new science shops were mentored by experienced staff. Four Summer Schools were held to give participants from all over Europe a crash course 'Science Shops'. See: http://bit.ly/1p0wIBb

Online Debates:
The PERARES-project piloted with an international on-line debate portal, intended to discuss issues and together define relevant research questions on that topic, and forward these to Science Shops, researchers and funders. The motto 'what do we agree that we don't yet know, but still is important to know'. Topics were nano technology; natural resources accross Europe; Code of Conduct for Research with and for Roma people; Food Gardens

and the City; Local Economic Development; and Domestic Violence Research. See: http://bit.ly/1wEY66x. There is still a challenge in on-line debating; Science Shops normally set research questions face-to-face with organised groups; on-line we deal with scattered participants and can use only written text, reducing speed and clarity of communication.

We did an interesting preliminary study on previous dialogues about nanotechnology, which we used in preparing for the international on-line dialogues (http://bit.ly/1u6Rm4E).

Developing research questions:

On two issues, PERARES partners set-up tri-national co-operation to develop research questions. Three universities and three CSOs worked together on the issue of research on domestic violence. The final report gives insight in barriers to identify and respond to domestic abuse cases, with a secondary focus on immigrant women. The report gives policy recommendations and identifies barriers faced by health care workers as an issue to take up in European agendas (http://bit.ly/1vfpB4m).

Co-operation with Travellers' and Roma groups with researchers in three countries also led to a Code of Conduct for research with marginalized groups: http://bit.ly/1rzvIP0 We worked with Roma and Travellers groups to describe how researchers/policy makers can do/support research with them. The final report articulates requests from CSOs for the future cooperative research agendas and shows what the teams achieved in their participatory research with and/or for Roma and Travellers on local human rights.

Strategic Impact:

1) An improved transnational cooperation between research bodies, in the domain of public engagement in research;
   PERARES has succeeded in bringing together a group of research bodies and CSOs with different backgrounds, who are learning together. They are engaged in joint studies to improve PER in social sciences (WP5 and 6), and have jointly set-up a transnational knowledge debate in the physical sciences, and social sciences as well.

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2) An improved mobilisation of researchers to engage with civil society in their practices; During PERARES, the number of researchers involved in PER is growing, both by our involving them in various debates (WP2 and WP3) and by our setting up of more Science Shops or other means of doing research with CSOs (WP4). Also the parallel studies performed in WP7 and WP8 show how more researchers can become active in engagement activities. WP5 and WP6 provide evidence for how to improve this mobilisation, especially in the social sciences. Our dissemination activities and conferences (Bonn (2012): http://bit.ly/1tCZHuT; Copenhagen (2014): http://bit.ly/1p0NhwV), including the open workshops in WP4, made our resources and knowledge of good practices available to non-PERARES partners, thereby making it easier for scientists all over Europe and beyond to engage with civil society. See e.g. Handbook about "How to embed civil society driven research in curricula and Higher Education strategies": http://bit.ly/1aeCrKc; Practical Guide to developing policy and strategy: http://bit.ly/18R0oD3; Full Report about the role of research funders in supporting civil society driven research: http://bit.ly/1jDxqzN; How to use Scenario Workshops to co-construct strategies and research plans: http://bit.ly/1iT4Tpu; Report "How to evaluate Science Shop type of projects, at the proposal stage, midterm, end-of-project and post-project with justification and a chapter on economic evaluation of Science Shops: http://bit.ly/1xE8Qm0

3) An increased participation of civil society actors in research activities and an enhanced incorporation of the needs and concerns of civil society in research strategies;
This is one of the main achievements of the PERARES project. First of all, the number of interactions between CSOs and research institutes is increased. This is done directly in the social sciences studies happening in WP5 and WP6, in which CSOs participate in the research process, and in the dialogues as described in WP2 and WP3. It is also done in a number of pilot projects that are running during the start-up phase of the ten new Science Shop structures, as described in WP4, and the post-doc project described in WP8.

4) The definition of new cooperative research agendas involving researchers and civil society actors and the combining of their respective knowledge and experiences;
PERARES is already having an impact on the definition of new cooperative research agendas. This is visible both at local level (individual dialogues –> research requests –> local Science Shops' (pilot) projects), especially at the new science shops (but also in local dialogue events to prepare for the on-line dialogues), and transnationally, especially through the two specific areas of the social sciences (domestic violence and Travellers/Roma).

Advantages

There has been a strong partnership which has allowed all the results to be achieved, in many different countries. E.g. the Science Shop concept once again proved adaptable to local situations. Many others can benefit from the deliverables, which have been disseminated through the Living Knowledge Network.

Obstacles

There is still a challenge in on-line debating; Science Shops normally set research questions face-to-face with organised groups; on-line we deal with scattered participants and can use only written text (with translation issues if done on a European scale), reducing speed and clarity of communication. For the rest, no real problems have been encountered, since our approaches are demand driven, so the stakes for the civil society organisations are pretty clear. Their research questions are answered. This is different from traditional top-down communication or discussions organised to discuss scientific developments that have their impact in the further future. Because there was funding, other administrative resistances were not threatening.

Innovative dimensions

It combines people with different backgrounds working from different motivations for engagement (e.g. from science events/science centers, university or CSOs). The innovative aspect of combining on-line with face-to-face meetings still needs further elaboration.

The Science Shop approach in itself is still an innovative approach for those institutes and even regions that don't know this approach yet. In a Science Shop, questions from civil society organisations are taken in, and students and staff are sought to perform this research. Since the students obtain credits for this and not payment, the service can be offered for free or at low cost (students have to obtain credits anyway and professors already need to supervise that). Of course, in meetings the actual research questions are articulated, together.

Orientation towards societal challenges

- Health, demographic change and wellbeing
- Food security, sustainable agriculture and forestry, marine and maritime and inland water research, and the Bioeconomy
- Secure, clean and efficient energy
- Smart, green and integrated transport
- Climate action, environment, resource efficiency and raw materials
- Europe in a changing world – inclusive, innovative and reflective societies
- Secure societies – protecting freedom and security of Europe and its citizens

The PERARES project combined people from all disciplines, and because of the demand driven nature of engagement through Science Shops, the project is relevant to all Grand Challenges – and Science Shops actually did projects in all these.

Similar initiatives
- See the Flemish Science Shops in this catalogue

SpICES
-Special initiative for Citizen Engagement in Science

The project's primary aim was to assess how the media can facilitate a stronger two-way dialogue between science and society in order to construct a participatory way of developing science policy at the European level. Over fifty thousand Europeans from five European countries contributed with their opinions and concerns in a questionnaire relating to the relationship between science and society. The results of the pilot project were submitted to the European Commission as a contribution to the preparation of the topics concerning the first call for Horizon 2020 proposals.

Context

"Citizens have a right—and are expected—to be involved in the crucial decisions of what their futures will look like and how science and technology can contribute to its betterment."

As outlined in the framework for Responsible Research and Innovation (RRI), the grand challenges facing society will have a better chance of being tackled if all relevant actors are fully engaged in the co-construction of innovative solutions, products and services. Thus RRI is being developed in order to foster the creation of a research and innovation policy driven by the needs of society and engaging all actors via inclusive participatory approaches.

The Special Initiative on Citizen Engagement in Science (SpICES) promoted by Atomium Culture aimed to assess how media can engage the public at large in a two-way dialogue about science-related issues in order to develop a more participatory way to develop science policy at European level.

Background information

Name: SpICES – Special Initiative for Citizen Engagement in Science

Organizer: Atomium Culture

When: December 2012 – June 2013

Where: Austria, Germany, Ireland, Italy, Spain

Who: Erika Widegren, Atomium Culture

Additional information: www.atomiumculture.eu

Initiative characteristics

PE category: Public Consultation

Mechanism: Public opinion surveys

Main purpose of initiative: Awareness raising, consultation, dialogue

Geographical scale: Europe

Organizing entity: International non-profit organisation

Target groups: Lay publics, researchers, media, public officials

H2020 Societal Grand Challenge(s):

- Europe in a changing world inclusive, innovative and reflective societies

The pilot project was developed together with Der Standard, El Paìs, Frankfurter Allgemeine Zeitung, Il Sole 24 Ore and The Irish Times and was launched in 5 European countries (Austria, Germany, Ireland, Italy, Spain) in April and May 2013.

The initiative was co-funded by Atomium Culture and the European Commission (European Union's Seventh Framework Programme for Research (contract nr 332622 – project EISRI II – The Role of the Media in Responsible Research and Innovation)).

The results of the Initiative were submitted to the European Commission to contribute to the preparation of the topics for the first call of the Horizon 2020 proposals (notably the 'Engagement' part of the Science With And For Society programme).

Aims and mechanisms

Science is not only an issue for scientists: science is an issue for society. Science enables us to understand the world around us and helps us improve the world we live in. Whether we are talking about health, demographic change, the transition to a low-carbon society, or the development of sustainable fisheries or agriculture, science plays a central role.

SpICES aimed assess how the media can facilitate a stronger dialogue between science and society. Media plays a pivotal role as intermediary with the public, and it could support an even stronger direct dialogue between researchers, policymakers and the public in general.

The aim of the Special Initiative for Citizen Engagement in Science was threefold:

- To set some key questions to the public at large about the European research priorities and measure the reactions and opinions of the public on these questions;
- To create awareness with the public at large about Horizon 2020 and the European research agenda (notably the 'Engagement' part of the Science With and For Society programme);
- To assess how media can support citizen engagement in questions regarding research and innovation

SpICES saw the participation of over fifty thousand Europeans who contributed with their opinions and concerns, responding to six questionnaires relating to the relationship between science and society as outlined in the framework for Responsible Research and Innovation (RRI).

Questionnaires on science education, gender, ethics, open access, engagement and governance were launched to engage the public at large in debates on these questions and to understand the main needs and concerns of society.

The questions were developed in collaboration with the European institutions, journalists and the scientific world in order to include relevant themes, scientifically valid concerns and questions that could spark a real debate among the public at large.

SpICES was supported by two Committees, the Editorial Committee and the Quality Reference Group, that helped to develop the content together with the editorial team of Atomium Culture and the Science in Society Unit of the European Commission.

The aim of the committees was to represent the different perspectives of the actors engaged, to ensure the scientific validity of the questions asked and to strengthen the outreach potential of the initiative.

SpICES ran in five European countries with the cooperation of five leading European newspapers:

- AUSTRIA – DER STANDARD: one of Austria's best-selling quality newspapers and is readily quoted by foreign media when an opinion from the Austrian press is required. The paper's general editorial stance could be described as socially liberal and most of its regular columnists also tend to this position, although guest writers come from a wide variety of political positions.
- GERMANY – FRANKFURTER ALLGEMEINE ZEITUNG: a German daily published in Frankfurt. Founded in 1949, this major conservative-liberal daily is a reference tool in business circles and among intellectuals, who appreciate its literary supplement, Feuilleton. The FAZ is the German daily with the widest circulation abroad and one of the world's largest networks of correspondents, which makes it by and large independent from the press agencies.

- IRELAND – THE IRISH TIMES: considered to be Ireland's newspaper of record. Though formed as a Protestant nationalist paper, within two decades and under new owners it had become the voice of Irish unionism. It is no longer considered a unionist paper; it is generally perceived as being politically liberal and progressive, as well as being centre-right on economic issues.
- ITALY – IL SOLE 24 ORE: Italy's reference business daily was founded in 1965 and is the third national daily, with circulation boosted by an increase in publication of non-economy related articles. Its Sunday culture supplement Domenica pulls in an intellectual readership that normally shows little interest for economics.
- SPAIN – EL PAÍS: the world's leading daily newspaper in Spanish and a byword for quality in the field of journalism in the Hispano-American world. It was first published on May 4, 1976, and its founders envisaged it as an independent quality, European-oriented newspaper, and an advocate of multiparty democracy.

The initiative ran for six weeks (from week 16–21 of 2013) in both the paper and online editions of the newspapers. Each week assessed one key "question" relating to science in society. Each question was introduced by:
- An editorial piece on the paper and online edition to introduce the topic of the question;
- A banner on the online edition with the "question" that links to an external window where a poll with a multiple-choice answer panel is present;
- A comment session for the persons who want to engage further in the debate.

Results

The SpICES saw the participation of over fifty thousand Europeans who contributed with their opinions and concerns, responding to six questionnaires relating to the relationship between science and society as outlined in the framework for Responsible Research and Innovation (RRI).

The results of the Initiative were submitted to the European Commission to contribute to the preparation of the topics for the first call of the Horizon 2020 proposals (notably the 'Engagement' part of the Science With And For Society programme).

SpICES was launched in order to experiment a new way for researchers, policy makers and the public to engage through the media on issues relating to research and innovation.

It was launched with the perspective of using new media tools to better understand the concerns and opinions of the public at large about science in collaboration with some of the leading science communicators in Europe and through the authoritative mediums of the media partners of the project.

The questions that the project set out to answer were:
- Is it possible to create a direct dialogue between scientists, policy makers and the public through the media?
- Do people want to be more engaged in debates relating to research and innovation?
- Can the media support this direct dialogue?
- Are policy makers willing to engage in a constructive debate with the public at large on these issues?

The pilot project proved that the answer to all the questions above is an overwhelming YES. The public at large is interested in scientific issues and would like to be more engaged in policy debates about research and innovation.

The results underlined the need for further efforts such as the ones promoted by the European Commission in engaging citizens more in developing the research agenda.

The clear position of the Commission in this regard and the aim to ensure that Horizon 2020 takes account of the opinions and concerns of citizens is a laudable way to lead by example.

The evaluation of the SpICES was based on three factors:
1. The Evaluation Survey made available at the end of the initiative;
2. The feedback received from the partners and the members of the Committees;

3. The experience of the participants and the creators during the initiative itself received as comments, feedback or notes to the team leader.

The purpose of the evaluation was to get an understanding of whether the idea in itself of the project was well received, what aspects were most appreciated and what could be improved.

Advantages

The Special Initiative demonstrates that it is possible to engage the public in constructive debates relating to research and innovation. The public is interested and does welcome this type of action. New ICT technologies do facilitate the possibility of creating a more participatory approach to science governance. People do want to be engaged and have opinions about research and innovation.

The main advantage of the initiative was the structure of the pilot project, with its key pillars being necessary elements for citizen engagement through popular media:

Openness: The pilot project was developed with an open mindset to try and gain as much insight as possible (within the limits dictated by the editorial space and the suggested "time" of the survey) about the concerns and opinions of the public on six areas relating to Responsible Research and Innovation. This could be seen in the editorials, the questionnaires and the discussion forums–all of which were set up as starting points for the discussions without trying to lead the participant.

Neutrality: The questionnaires and editorials were set out to be as neutral as possible. In order to ensure that the different perspectives and arguments were being represented, the Committees involved in the project represented the different actors engaged in the debate.

Authoritativeness: The authoritativeness of the partners involved in the pilot project was a key element of its success. Working with leading institutions (universities, media and the European Commission) gave the project the credibility that is necessary for a concrete debate. The questionnaires were developed by leading representatives from the research world, journalists and policy makers to construct surveys that were scientifically sound, accessible and of interest to the public, and whose results could develop into concrete choices by policy makers. The medium through which the surveys were presented to the public were some of the most authoritative media in Europe who, through active participation throughout the process, could stand as an "ombudsman" of the project, in charge of representing the interest of the public.

Results: The active participation of the European Commission in the development of the pilot project was a necessary element to show that the initiative would come with some concrete results. Additionally, the European Commission confirmed that the outcomes of the survey would contribute to the preparation of the topics of the first call for proposals of Horizon 2020, notably the 'Engagement' part of the Science With And For Society programme.

Obstacles

As described above, a detailed evaluation process was set out to evaluate the positive and negative aspects of this pilot project.

Overall the initiative was received very positively and participants felt that what they liked most was the innovativeness of the idea itself.

Suggestions on how the initiative can be improved include:
1. Give more time for the members of the Quality Reference Group to evaluate the proposals as well as perhaps including the members of the quality reference group earlier in the process;
2. Organise a workshop with the different stakeholders present to formulate the questionnaires;
3. Develop of a closer link between the questionnaire and the European Institutions, perhaps by having a discussion forum following the results with members of the European Commission;
4. Develop an online tool/website that can monitor the outcomes of the questionnaires and the effects these bring;
5. Have a more dynamic way of setting the questions taking account of the concerns that the public bring forward;
6. Include an active decision to use new media tools to "promote" the ini-

tiative, making more people aware of its existence (for the current pilot project the decision was made not to do any promotion in order to avoid influencing the results).

7. The importance of the translation: during the gender week, we received a comment from a Spanish participants highlighting that the nuance in the Spanish version was slightly different than that of the English version. It was not a mistaken translation in itself but did reflect a different perspective that could alter the results in Spain. Building a structured team of translators who can work well together and with the writing team is very important. Further, as different words or subjects do have different connotations in different languages, it could be important to keep these in mind when drawing up conclusions from the data sets.

8. The development of a better defined new-media strategy for the project: in light of the high participation and the number of countries that were included in the pilot, it would be advisable to have a more structured new-media strategy with hashtags that can follow the debates across the countries and see how they spread. This could also facilitate reporting statistics from different new-media platforms. By analysing comments, blogs and tweets, we could already see that the debate spilled into different countries (including Sweden, France and China).

9. The development of questionnaires that can allow for more nuanced responses.

Innovative dimensions

The SpICES initiative was developed to assess how the media can facilitate a stronger dialogue between science and society.

As outlined by the opinions of the participants of the project, the most innovative aspect of SpICES was bringing together the worlds of research, media, policy making to support the development of a more responsible, reliable and open public debate on issues.

With a dramatically changing media environment, challenging economic and social climates, shifting relationships between citizens and policy makers and an evolving understanding of democracy, science stands as a ready tool to help combat modern difficulties.

In today's world, there is a strong need for better collaboration and more effective knowledge transfer between different sectors; the challenges that we will have to face in the coming years in energy, social security and climate issues are huge and will require input from all different directions. Recent developments in ICT technologies have unlocked the potential for knowledge sharing and open science.

Better dialogue between science, media and citizens will not only ensure more informed and responsible societies and policy making but also support the strengthening of the European innovation system.

The innovative aspect of SpICES was to show how better collaboration between science, media and policymakers could be done by relying on the strengths of each actor to achieve the shared aim of a more open, informed and inclusive society.

Orientation towards societal challenges

- Health, demographic change and wellbeing
- Food security, sustainable agriculture and forestry, marine and maritime and inland water research, and the Bioeconomy
- Secure, clean and efficient energy
- Smart, green and integrated transport
- Climate action, environment, resource efficiency and raw materials
- Europe in a changing world – inclusive, innovative and reflective societies
- Secure societies – protecting freedom and security of Europe and its citizens

SpICES was launched to assess the validity of an innovative approach of understanding inclusiveness and how media could support a better dialogue between science and society.

The Pilot of SpICES was mostly linked to "Europe in a changing world – inclusive, innovative and reflective societies".

The approach of SpICES can however be applied to any of the societal challenges.

Similar initiatives

- Gene Week research project , UK 2002 (Levitt, Mairi, Kate Weiner, and John Goodacre (2005): Gene Week: a novel way of consulting the public. *Public Understand. Sci.* 14 (2005) 67–79.)
- Citizens' Agenda on Science and Innovation 2010, Spain (http://www.efc.be/programmes_services/resources/Documents/dossier%20prensa%20Agenda_en.pdf)

The Autumn Experiment

The Autumn Experiment was a mass experiment that aimed to raise awareness about science and research and to facilitate a two-way communication between researchers and pupils & teachers. The project involved more than 10.000 Swedish pupils who collected a large amount of data across Sweden. The project gained extensive media coverage and facilitated a reinforcement of the integration of researchers and schools.

Context

As part of the Swedish Researchers' Night, ForskarFredag (FF), each year since 2009 VA (Public & Science) coordinates a mass experiment that involves schools (and some general public participants) across the whole of Sweden. Every autumn, thousands of Swedish pupils of all ages are helping researchers gather huge amounts of data.

Prior to the selection of the annual mass experiment, researchers are invited to submit experiment proposals to VA, and the steering committee of FF then decides on which researcher/project to work with. "The Autumn Experiment" of 2013, was suggested by phenology researcher Kjell Bolmgren, Swedish University of Agricultural Sciences, together with professors Stefan Jansson of Umeå university and Lars Eklundh of Lund university.

In 2013, 30 cities across the whole of Sweden arranged activities during the Researchers' Night. The activities were organised by universities, science centres, municipalities and a regional development council. The organisers helped recruiting schools for the Autumn Experiment trough their networks. And while 78% of all students participating in the Autumn Experiment were between 7–12 years of age, the experiment included participants from under 6 years up to adults. As a marketing event of FF, the Autumn Experiment was funded by EU.

Background information

Name: The Autumn Experiment

Organizer: Vetenskap & Allmänhet

When: May 2013 – April 2014

Where: Sweden

Who: Lotta Tomasson, Vetenskap & Allmänhet

Additional information: http://forskarfredag.se/114-2014-10000-pupils-assist-swedish-scientists-climate-research/

Initiative characteristics

PE category: Public Consultation

Mechanism: Crowdsourcing (citizen science)

Main purpose of initiative: Awareness raising, education and capacity building, consultation, knowledge co-production

Geographical scale: National

Organizing entity: Non-profit organisation

Target groups: Youth, schools, researchers, lay publics

H2020 Societal Grand Challenge(s):
- Europe in a changing world inclusive, innovative and reflective societies;
- Food security, sustainable agriculture and forestry, marine and maritime and inland water research, and the Bioeconomy;
- Climate action, environment, resource efficiency and raw materials

Aims and mechanisms

The aim of the annual mass experiment is the same as for FF as a whole: to show members of the public how exciting research can be and how relevant science is to our daily lives. The mass experiment aims to show that researchers are ordinary people with extraordinary jobs, and to create dialogue and knowledge at the same time. In this sense, the mass experiment is of mutual benefit: the researchers get more data than they could otherwise easily collect, participating pupils get to participate in real research, and teachers get material and methods based upon state-of-the-art research to integrate into the curriculum.

For students to:
- have the opportunity to participate in, and contribute to real research
- be introduced to scientific method/systematic work of researchers
- gain interest in science

For a researcher to:
- obtain large amounts of data from various locations
- get more data than one could otherwise easily collect
- test a hypothesis
- engage in dialogue with the public and retain respect and trust

For teachers to:
- get material and methods based upon state-of-the-art research to integrate in the curriculum.

For science event organisers to:
- attract media attention
- reach potential visitors to other events
- create a wider and deeper understanding of science

For the researchers, the Autumn Experiment had the following objectives:
The length of the growing season has a fundamental impact on the ecosystems in Sweden. Thus, the ongoing extension of the growing season, caused by climate change, is of great importance for forest growth, carbon exchange, biodiversity and numerous other ecological factors. However, there is a lack of knowledge about how the conclusion of the growing season – autumn characteristics – are affected and changed. One important reason why we have less knowledge about how plants and animals are affected by climate change in autumn is that we lack observations of autumn signs in nature. For individual researchers, gathering the necessary observational data from a wide geographical area is virtually impossible.

With the Autumn Experiment, the researchers wanted to:
- Measure the differences between different species' development of autumn leaves
- Measure the differences in autumn leaf development between different parts of the country
- Connect differences in autumn leaf development to genetic differences
- Develop methods for following the development of autumn via satellite imagery

January:

To find a suitable research project for the mass experiment, VA uses its network of 80 member organisations, as well as social media and the local FF organisers, to invite researchers/research groups interested in gathering large amounts of data from all over Sweden to submit project proposals.

February:

The steering committee of FF, which consists of all local project managers and the national coordinator VA, then chooses a project which fits the overall objectives of the mass experiment, the age group in mind, and the budget of the project. As a general rule, the mass experiment should be about "myself or my near surroundings" and involve the students as research assistants rather than research subjects.

The researcher and VA co-design the experiment and decide on how the data is to be collected, costs to be covered, and jointly produce a communicative and easy-to-understand guide for participating teachers. The guide is an important tool to encourage teachers to take part in the experiment.

Another important aspect is to define strategies and means to facilitate two-way communication between teachers/schools, the researcher and VA; in the Autumn Experiment, this was primarily achieved through the use of social media and email.

The different roles and responsibilities of VA as the coordinator and the researchers should be defined early on in the process.

Challenges for the Autumn Experiment included helping the researchers narrow down the project and to keep the timetable set in the beginning, as well as making the teacher's guide interesting and easy enough to follow for the schools to do the reporting and engage with the project.

May/June:

To recruit schools for the mass experiment, an invitation goes out from all FF organisers, via social media and the network of the participating researcher/research group. A press release to engage media to write about the experiment is sent out by VA to the national media, and a locally adapted version is distributed to local/regional media by the local FF organisers.

August:

The last day for schools to register their participation is in mid-August, around the start of the Swedish academic year. The teacher's guide is subsequently distributed electronically to schools free of charge in late August.

The practical phase of the Autumn Experiment – the actual data collection – was performed by schools during September–October in connection to FF. Because of the large geographical area covered in the experiment, and the variance in the beginning and end of autumn in different parts of Sweden, the experiment had to be performed at different dates in the north and south.

April 2014:

The final report was published.

Comment: A lecture by Professor Stefan Jansson, plant geneticist at Umeå University, where he tells how he studies the autumn leaf development and the genes of the submitted leaves was published on the web. The result of his part of the Autumn Experiment will be published in a sepa-

rate report when the analysis is complete. The analysis took longer than expected due to the large number of participants. https://www.youtube.com/watch?v=vVEOsuL-5m0&list=UUqL4q7zDj-G5EvGiIMFFhpw

Results

At least 56 articles about the Autumn Experiment were published in traditional media. Both national television/radio and local media covered the experiment. Additionally, the experiment was frequently mentioned in social media. In conclusion, children doing science was perceived as a really good story by the media.

Overall, the outcomes of the mass experiment were very satisfying. Over 10,000 students participated in the experiment. Approximately 12,000 reports about more than 2,000 trees from 378 different places in Sweden were registered. (For comparison the population of Sweden in 2013 was 9,644,864.)

The evaluation form was filled in by approximately 50% of the participating teachers. Some of the results are displayed below.

83.2% of the teachers signed up to participate in the Autumn Experiment because of "the opportunity to participate in a research project", 60% because "the task fit into the curriculum" and 51.4% because "the task was easy to work with".

64.7% of those who did not register the results of their class reported a lack of time as the reason.

On the question "Have the students' perception of scientists changed after participating in the Autumn Experiment?"37.5% reported "Yes, to the better".

74.3% reported that the Autumn Experiment had definitely added value to their teaching.

The participating teachers particularly appreciated the experiment being simple to perform, easy to understand, and not requiring any extra equipment.

The objective of showing that researchers are ordinary people worked well in social media. For instance, one teacher asked for pictures of the researchers involved in the experiment to show the pupils, and another won-

dered what an ordinary day at work was like for them – was it out in the woods or in the lab?

"No," the researcher replied, showing a picture of a desk with a computer and a lot of papers with numbers on them.

Advantages

Main advantages of the initiative included showing how far a mass experiment can reach with regards to publicity and recognition. It demonstrated to other scientists the advantages of engaging in this kind of science communication activities. The scientists in the Autumn Experiment were so pleased with the outcomes that they started a new initiative with external funding to develop more citizen science projects with schools.

Obstacles

A mass experiment of this kind demands a lot of time and effort on the researchers' part. For the experiment to be successful, the researchers involved must be dedicated to the experiment and the work it requires, and also be willing to answer questions and be present in social media. They need to cooperate with communicators on putting together the teacher's guide, a popular science report and in the general marketing of the mass experiment.

Innovative dimensions

The subject of phenology is easy for the public to relate to and for schools to integrate into the curriculum. The Autumn Experiment combined three researchers from different fields, from three different universities in an interdisciplinary collaboration.

One of the most important dimensions of the experiment was to demonstrate how collaboration between researchers and the public (mainly school pupils) is a win-win situation for all parties involved. From its very beginning, the mass experiment was centered on dialogue – between researchers, with the media, the public, participating schools, FF organisers,

etc. – and at the same time the experiment managed to create and maintain a degree of simplicity. The geographical spread of participating schools, the amount of data collected and the media coverage were all quite unique. And in the end, it led to more integration between researchers and schools and more financial support for the researchers.

Orientation towards societal challenges

- Health, demographic change and wellbeing
- Food security, sustainable agriculture and forestry, marine and maritime and inland water research, and the Bioeconomy
- Secure, clean and efficient energy
- Smart, green and integrated transport
- Climate action, environment, resource efficiency and raw materials
- Europe in a changing world – inclusive, innovative and reflective societies
- Secure societies – protecting freedom and security of Europe and its citizens

A warmer climate means an earlier spring and a later autumn. The experiment helped scientists study the effect of climate change on deciduous trees in autumn, and how a delayed onset of autumn affects the Swedish ecosystem. The data helps to appreciate the effects of the plants' altered growing season on the concentration of greenhouse gases in the atmosphere.

Although it is not possible to draw any conclusions from a single year, the results suggest that the impact of climate change on autumn leaf development will vary greatly between different regions and different species of trees.

The Autumn Experiment is valuable for the development of satellite imagery methods as a lot of information is collected over Sweden at the same time. With data collected on the ground as reference material, it becomes easier for scientists to accurately interpret and understand the information in the satellite images.

The new methods would give scientists quick and easy access to data on forests all over the earth, and new possibilities to study phenomena such as felling, damage by storms, fire and insects, growth and seasonality of the forest. Normally, this requires reliable field observations over large areas, which can be difficult to obtain for an individual researcher.

By participating in the mass experiment, citizens and children far from university cities and academia could take part in real science and engage in dialogue with researchers in social media. The Autumn Experiment provided a fun and engaging introduction to scientific method and the systematic work of researchers.

Similar initiatives
- Check the climate in your classroom, 2009–2010 (https://www.dropbox.com/s/4iv48qrb9xnn82j/CO2.pdf?dl=0)
- BioBlitz Bristol, 2009, UK (http://www.publicengagement.ac.uk/how/case-studies/bioblitz-bristol)

VOICES
-Views, Opinions and Ideas of Citizens in Europe on Science

The main aim of the VOICES projects was to identify citizens' ideas, needs and expectations with respect to research priorities for the theme of 'Urban Waste and Innovation'. Through an "upstream" methodology in the form of focus groups conducted across 27 EU countries, the project provided a deep and unique understanding of public opinion on the topic of urban waste. These priorities were summarized and used by the European Commission to draft some of the calls for research proposals under the new Horizon 2020.

Context

The VOICES project was funded by the European Commission under the Science in Society 2013.1.2.1-1 call on citizen participation in science and technology policy. The project was led by Ecsite, the European network of science centres and museums, and consisted of a Europe-wide citizen consultation exploring the concept of waste as a resource.

In recent years, the EU has been supporting the involvement of different societal actors in scientific research: researchers; but also citizens, policy makers, CSOs, etc.; in research and innovation processes, in order to better align the outcomes of scientific research to the expectations of European citizens. This approach is known as Responsible Research and Innovation (RRI). The VOICES initiative was taken in line with the RRI approach, in order to demonstrate how policymaking related to research and innovation can be directly influenced by the opinions of European citizens. By engaging participants in face-to-face conversations, the VOICES consultation has successfully tested an innovative, in-depth way of finding out how people really feel about research and innovation. It has also allowed them to bring about their own ideas.

Background information

Name: VOICES – Views, Opinions and Ideas of Citizens in Europe on Science

Organizer: Ecsite (European network of science centres and museums)

When: January 2013 – July 2014

Where: Europe – 27 European countries

Who: Marzia Mazzonetto, Ecsite

Additional information: www.voicesforinnovation.eu

Initiative characteristics

PE category: Public Consultation

Mechanism: Focus groups

Main purpose of initiative: Consultation, co-governance

Geographical scale: EU (27)

Organizing entity: European network of science centres

Target groups: Lay publics, public officials

H2020 Societal Grand Challenge(s):
- Climate action, environment, resource efficiency and raw materials;
- Europe in a changing world inclusive, innovative and reflective societies

One thousand European citizens from 27 EU countries participated in focus group discussions about the topic 'Waste as a resource' using a structured VOICES methodology which spans training, implementation and analysis.

Aims and mechanisms

The overall aim of the VOICES project was to identify citizens' ideas, preferences, values, needs and expectations with respect to research priorities for the theme 'Urban Waste and Innovation'. Another important aim of the VOICES project was to yield valuable insight on methods and procedure for engaging citizen participation to help set the research agenda for Europe's Responsible Research and Innovation framework. The knowledge gained through VOICES will echo in similar participatory actions across Horizon 2020.

VOICES consulted citizens using a renowned method - focus groups – in a unique way. In terms of structure, the VOICES focus groups incorporated four exercises, which engaged the participants on the relevant topics, drawing out collective opinions and ideas in a carefully facilitated face-to-face process. The VOICES focus groups were led by trained moderators from science centres and museums, following a semi-structured script designed by researchers of the Athena Institute (VU University Amsterdam). This specific methodology ensures the results are both meaningful and valid, and was successfully implemented in a range of cultures and contexts, across 27 EU member states. Focus groups are a very important element of VOICES. This methodology allowed for flexibility as well as uniformity, and was very much enjoyed by participants and moderators.

- Flexibility: the VOICES methodology was successfully implemented in a range of cultures and contexts, across 27 EU member states, and can also be adapted for use at national and local levels, and with a range of policy topics.
- Structure: the VOICES focus groups worked on four exercises, which engaged the participants on the relevant topics, drawing out collective opinions and ideas in a carefully facilitated face-to-face process.

- Expertise: 22 external experts from a variety of backgrounds were involved in validating the methodology, devised by a highly experienced academic team at the VU University Amsterdam's Athena Institute.

We invited European citizens from a range of ages and backgrounds to focus groups in 27 countries of the European Union. Participants were selected by local recruitment agencies, according to predefined selection criteria. Selection criteria were applied in order to obtain diversity in focus group participants, and to represent society at large. General selection criteria with respect to demographic information included sex, education and employment. The focus groups were stratified by age using the following categories: 18 to 35 years of age, 36 to 50 years of age and 50+. Other specific criteria addressed elements relevant to the VOICES project's specific topic, including: participants from urban and non-urban areas, diversity of types of municipality and diversity of housing situation.

Each group of ten people met in a science centre or museum. A moderator from the science centre or museum introduced the topic and guided the group through four simple exercises, in which they discussed face-to-face. The exercises allowed them to engage with the chosen topic, relate it to their everyday lives, identify their concerns and propose solutions as a group. The conversations brought out a huge range of opinions. It was impressive to see how engaged people felt with the topic, putting forward hundreds of ideas, from the creative and inspiring to the serious and urgent. Each focus group lasted three hours and was completely transcribed, word-for-word, and translated into English.

The main areas of discussion were:
- How do you get rid of rubbish in your household?
- What stops you from disposing of waste in better ways?
- How could we achieve a "zero waste society"?
- Which of the group's ideas do you think are the most important?

The VOICES consultation process used science centres and museums as powerful spaces for public engagement. Science centres and museums not

only play an important role in informal science education, but are also engaged in initiatives which impact local and European policy making. They are spaces where people can engage in and debate complex and controversial issues in science. Science centres equip adults, teenagers and children with the tools to become informed, engaged and responsible citizens.

Results

Through VOICES, citizens from 27 EU countries had the concrete possibility to contribute with their ideas to the definition of strategic priorities for research in the EU in the field of waste management. The VOICES participatory exercise provided a deep and unique understanding of public opinion on the topic of urban waste, showing that in many areas citizens do have significant knowledge of the challenges facing waste disposal in Europe. It has also highlighted some issues which would allow for real social innovations, greater public engagement and new business opportunities.

The outcomes of the focus groups were analysed by researchers, who first summarised the priorities for each country, and then compared these results on a European level. The reports produced were used by the European Commission to draft some of the calls for research proposals under the new Horizon 2020 Framework Programme for Research and Innovation. This means that the VOICES outcomes have made a significant contribution to the research priorities of scientists in Europe working in the area of 'Waste: A Resource to Recycle, Reuse and Recover Raw Materials'. Researchers, policymakers, science communicators and civil society organizations are also looking at VOICES results to find inspiration for socially relevant propositions and innovations.

Many of the key outcomes emerged from the discussions with European citizens legitimise current EU priorities on the topic of 'Urban Waste'. Much of what was relevant of these findings related to awareness: confirmation that in many areas, citizens do have significant knowledge of the challenges facing waste disposal in Europe, and agree with current EU research priorities. The VOICES outcomes also underlined some issues which are not sufficiently accounted for by current EU priorities on the topic of 'Urban

Waste', and which could be used to strengthen European research and innovation. These elements constitute the core of the VOICES contribution to RRI and strong suggestions for better social innovation in the field. For example, one aspect of the waste management process which focus group participants emphasised heavily in consultations across the EU was the issue of recycling and household convenience. European citizens feel convenience in the household is crucial. The VOICES outcomes pointed to a clear need for devices to facilitate sorting and compacting in the home (along the lines of "smart bins"), or technology which allows waste to be used as a resource in the household. The analysis of the VOICES consultation outcomes also brought up a number of questions, which could form the basis of future research into European attitudes towards urban waste as a resource, and the concept of a 'zero waste society.'

Advantages

As a qualitative research method, focus groups are increasingly used in political and social sciences. An important advantage of focus groups in comparison to other research methods is that participants can respond to and build on the views expressed by the other participants. Because of this interaction, focus groups generate a large variety of opinions and ideas which provide insightful information, while maintaining a specific focus during the discussion. The method provides the opportunity to gain in-depth insight into ideas, values, wishes and concerns of participants and stimulates shared creative thinking. A specific characteristic of the focus group method is that it seeks understanding of a research topic from a particular perspective; in the case of the VOICES project, the perspective of European citizens.

The fact that the VOICES consultation resulted in an impact and a set of potential future opportunities for more research and analysis is further confirmation of its value as not just a consultative tool but also a framework within which RRI can be fostered and advanced. The VOICES methodology is available in detail on the VOICES website, designed to adapt and use in your own consultation processes: www.voicesforinnovation.eu

VOICES outcomes are intended to be used by many types of stakeholders, on a local and national, as well as European level, for a range of purposes.

- Industry can make use of the results to look into gaps in the market for new innovations;
- Researchers can use VOICES results to align their research with the principles of RRI;
- Educators can use project outcomes to give a national and European perspective to classroom discussions on current science topics;
- Universities can use VOICES as a model for citizen participation.

Obstacles

Looking back at the project, it should be noted that it is important with such a consultation process to be clear in advance about the expected outcomes. In the case of VOICES, the consultations were clearly aimed at identifying and collecting citizens' ideas which would influence part of the priorities of a specific EU work programme for research and innovation. One misconception about VOICES could be that it was inviting citizens to identify problems in the waste management process and directly come up with new innovations in order to solve these problems. This may well be a by-product of the work of the VOICES consultations, and it is true that the methodology involves participants identifying and prioritising solutions, but the ultimate objective was for citizens to identify ideas (not only those linked to existing problems) to feed into analysis and influence research priorities. The success of the project can clearly be judged on these terms.

That said, participants in the VOICES consultations did come up with a number of significant creative innovations. Thanks to the structure of the focus group, these innovative ideas were also assigned priority by each group, validating the importance of each idea in the eyes of European citizens.

Photo Pixabay

Innovative dimensions

Compared to many other consultation initiatives, VOICES represents a breakthrough in its commitment to formally include the results of the citizens' consultations in the main policy directions, shaping the priorities of future European research.

VOICES was also particularly innovative because of its scale (covering all of the EU member states at the time) and because of the methodological approach used on this wide scale: an approach which made use of a qualitative methodology (focus groups), which gathered and analysed citizens' views, fostering real governance processes and social innovation. Another unique element is that the knowledge gained with this pilot project, in terms of methodology, infrastructure and results, can be used to organise similar participatory actions across Horizon 2020.

Citizens' active participation in research and innovation is becoming a strong priority in Europe, as confirmed by the EU Framework Programme for Research and Innovation Horizon 2020. Today more than ever, scientific and technological solutions need a societal uptake. Participation empowers citizens and strengthens science governance. The ground-breaking VOICES process was the first in-depth consultation of people living in every country of the EU on a scientific topic. The methodology used, 3-hour focus groups, resulted in a deep, unique understanding of citizens' views. Citizens around Europe were delighted by the clear commitment of the European Commission to make use of their VOICES to influence research priorities. VOICES has proved to be a successful model of democratic science governance. It produced an innovative and replicable participatory process, orienting research, innovation and policy making more strongly towards societal needs. VOICES represents a milestone in Responsible Research and Innovation (RRI), fostering new multi-stakeholder participatory activities in the future. Embarking on such a large-scale consultation with such a direct impact, shows a strong commitment from the European Commission to the concept of Responsible Research and Innovation.

Orientation towards societal challenges

- Health, demographic change and wellbeing
- Food security, sustainable agriculture and forestry, marine and maritime and inland water research, and the Bioeconomy
- Secure, clean and efficient energy
- Smart, green and integrated transport
- Climate action, environment, resource efficiency and raw materials
- Europe in a changing world – inclusive, innovative and reflective societies
- Secure societies – protecting freedom and security of Europe and its citizens

We believe that VOICES brought a strong contribution to Challenge number 6, *Europe in a changing world – inclusive, innovative and reflective societies*, for its inclusiveness and its approach to social innovation. More specifically, VOICES contributed to Challenge number 5, *Climate action, environment, resource efficiency and raw materials*, as several of the ideas emerged from citizens who participated in the consultation bring forward interesting suggestions for the improvement of an important field of environmental sciences and better management of waste and resources.

> **Similar initiatives**
> - GM Nation? UK 2003 (Barbagallo, Fiona and Jill Nelson (2005): *Report: UK GM Dialogue. Science Communication,* 26: 318)
> - See the DEEPEN Project in this catalogue

Social Advisory Board

The Social Advisory Board (SOAB) was implemented by the Joint Programming Initiative "More Years Better Lives" (JPI-MYBL). SOAB is involved in a co-production of knowledge on the challenges and opportunities of demographic change and aims to advice the policy makers and financing organizations of cooperating member states in all issues concerning the Scientific Research Agenda (SRA) and alignment of research programs, implementation of joint activities, and dissemination strategies. SOAB has been involved substantially in the co-production of the SRA through recommendations and comments developing the role of public engagement in JPI-MYBL.

Context

The SOAB was implemented by the JPI-MYBL. The implementation was suggested by the general guidelines of the EC for the structure of JPIs recommending the representation of stakeholders; the specific composition and role of SOAB in the governance and functions of JPI-MYBL was, however, designed and decided by the General Assembly of JPI-MYBL. In view of the fact that demographic change affects people of all ages and virtually all spheres of society on a European, national, regional and local level a comprehensive representation of societal stakeholders had to be achieved. Since the board had to be restricted to an operational size, only stakeholder organizations on the EU level which represent in turn stakeholders on a national, regional and local level were invited (currently 14 organizations and 1 Eastern EU expert). As had to be expected given the broad scope and cross-cutting challenge of demographic change, especially those organiza-

Background information

Name: SOAB – Societal Advisory Board

Organizer: Joint Programming Initiative "More Years Better Lives"

When: December 2012 – Ongoing

Where: EU level initiative

Who: Professor Richard Pieper, National Institute for Health and Welfare THL

Additional information:
http://www.jp-demographic.eu/about/soab-societal-advisory-board

Initiative characteristics

PE category: Public Consultation

Mechanism: Stakeholder consultation (consultative panel)

Main purpose of initiative: Consultation, knowledge co- production (Representing societal relevance in joint scientific research programming)

Geographical scale: European (with external partners)

Organizing entity: Joint Programmeing Iinitiative JPI-MYBL

Target groups: Stakeholder groups, public officials

H2020 Societal Grand Challenge(s):
- Health, demografic change and wellbeing;
- Europe in a changing world inclusive, innovative and reflective societies

tions followed the invitation which represent social and health policy interests and/or a more "bottom-up" perspective from regions, communities and citizens or welfare program and technology users, i.e. stakeholders with demographic issues urgent on their agenda.

Aims and mechanisms

The main objectives of JPI-MYBL are the formulation of a Scientific Research Agenda (SRA) addressing the challenge of demographic change in Europe and the alignment of national research programs, policies and initiatives in this thematic field. The objective is to enhance effectiveness and efficiency by transnational cooperation and exploitation of the diversity of challenges and approaches among JPI member states (currently there are 14 European states with Canada as external partner). The objective of the SOAB is the "societal pull" corresponding to the "scientific push" introduced into JPI-MYBL by the implementation of a Scientific Advisory Board (SAB). Both boards are involved in a co-production of knowledge on the challenges and opportunities of demographic change and are expected to advice the policy makers and financing organizations of cooperating member states in all issues concerning the SRA and alignment of research & innovation, joint activities, and dissemination strategies.

Since members of the board represent stakeholder organizations at the level of the EU, the identification and invitation of candidates was straightforward, although the selection was somewhat arbitrary. Not all organizations initially considered being relevant and/or claiming on their website to be aware of the importance of demographic change for their cause did eventually choose to join; not all participating organizations see demographic change as their only or even main concern. This holds, especially, if the challenge of demographic change is equated (as it often is) with the narrower issues of longer working lives and social and health care for older persons, rather than including effects of a changing age structure and the impact of migration on the sustainability of societies and regions which concerns the life situation of people of all ages and across generations and national borders. The SOAB is changing with new members invited on recommendation of current members or by application. A current project is the development of more systematic rules and criteria for the recruitment of relevant stakeholders. This implies an impact assessment of – in this case – demographic change to identify those individuals, groups and organisations which are directly afflicted, and an analysis of (potential) stakeholders which have to be addressed as relevant partners in policies and interventions. In line with the perspective of the SOAB, these tasks should not be left to "the scientists" (i.e. the SAB), but (also) have to be discussed and agreed among stakeholders.

Results

At this stage it is not yet possible to evaluate outcomes and impacts; the outcomes are tied largely to the work and impact of JPI-MYBL and will consist in the fostering of coordinated research, development and policies on demographic change among and beyond the participating countries. These outcomes and societal impacts are systematically evaluated as part of JPI-MYBL, including the general role of SOAB in this process. More specific outcomes of SOAB are reflected in the influence on JPI-MYBL activities. Based on discussions in SOAB and on an own survey of SOAB members and other societal stakeholders participating in JPI-MYBL (including policymakers and their experts, but excluding SAB) SOAB was involved substantially in the co-production of the Scientific Research Agenda through recommendations and comments on all other relevant activities (such as research actions and statements for the EC on H2020). A specific result of SOAB consultation was the inclusion of description of societal impact and stakeholder involvement among the criteria for applications under the first reseach call (April 2015) addressing the emergence of a new labor market and extended working lives.

Advantages

The implementation of SOAB was greatly facilitated by the context of JPI and is further supported by the initiatives "Science with and for Society" (SWAFS) and "Responsible Research and Innovation" (RRI) in H2020. In

the spirit if not guidelines of both programs the active involvement of stake-holders is regarded essential and options for implementation are indicated. Both programs, however, are not specific on the kinds of structures, functions and procedures of stakeholder involvement. In the case of SOAB, the stakeholder engagement is facilitated by active and financial support by JPI-MYBL and its CSA J-Age project financed by the EC. This enables support of SOAB by secretarial functions and systematic exchange with the SAB and other activities of JPI-MYBL opening avenues for co-production in the alignment of national programs on the challenges of demographic change.

Obstacles

The constitution of a representative SOAB for JPI-MYBL encountered ob-stacles, mainly because JPI itself is a new EC program relying fundamentally on initiatives of EU member states to co-ordinate their research & innovation activities. JPI is not yet perceived as an established partner by all stake-holders and the ways in which stakeholders can voice their interests effectively in that context are not yet developed. Also within JPIs the structures and functions are still in process and vary largely between JPIs. Accordingly, stakeholders still have to be actively recruited and are not always or easily convinced of the importance of their engagement. Within JPI-MYBL, the initiative was fostered considerably by the recognition and support of SOAB as essential element in joint programming. A recognized but still open is-sue is how stakeholder involvement below the EU level can be integrated. There are at least three channels readily available: the development of the communication with national stakeholder organizations through the participants in SOAB, the development of stakeholder contacts through the national representatives in JPI-MYBL, and the information and engagement of a wider public through the website.

Innovative dimensions

The innovative character of SOAB draws largely on the innovative character of JPI in general and on the specific experimentation with an effective advi-

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sory body in this context in JPI-MYBL. The effective involvement of stakeholders in this context is simply new territory and without any clear-cut solution. The SOAB initiative opens up a new arena for PE in the deliberation of research & innovations programming. At this stage, there are different approaches implemented in different JPIs. One of the current initiatives of SOAB of JPI-MYBL is to initiate an exchange between JPIs to find out to what extent these differences are due to the specific thematic challenges addressed, or to what extent learning from each other may suggest some more general recommendations for designing stakeholder engagement in JPIs. Clearly an innovative dimension is also the need to respect and integrate the different approaches to stakeholder engagement in different EU member states. A related problem is here the integration of stakeholders from e.g. the new Eastern member states which currently are underrepresented in JPI-MYBL. A Symposium on Demographic Change in Central and Eastern European Countries was held for this purpose in Vienna (March 2015). The SOAB includes for the promotion of Eastern stakeholder involvement – in a preliminary fashion –an independent Eastern expert with substantial socio-political and international experience in the field of demographic change.

Orientation towards societal challenges

- Health, demographic change and wellbeing
- Food security, sustainable agriculture and forestry, marine and maritime and inland water research, and the Bioeconomy
- Secure, clean and efficient energy
- Smart, green and integrated transport
- Climate action, environment, resource efficiency and raw materials
- Europe in a changing world – inclusive, innovative and reflective societies
- Secure societies – protecting freedom and security of Europe and its citizens

Obviously, the SOAB of JPI-MYBL is relevant for the societal challenge of demographic change which is specifically addressed in SC1 and also in SC6. On a thematic level, there is a substantial cross-cutting relevance of demographic change with all other challenges because of the impact of change of population size, structure and mobility on societal as well as environmental issues. More specifically, SOAB should be understood in the context of the RRI and SWAFS initiatives of H2020. "Science with … Society" explicitly addresses the development of effective ways of cooperation of science with societal stakeholders not only in the dissemination of science results to social policies, stakeholders and citizens, but also in the co-production of scientific knowledge and innovations. Stakeholder involvement in the development and alignment of national research & innovation programs, certainly, is an important aspect of these H2020 initiatives.

> **Similar initiatives**
> - Flagship project - Forward looking driving chance, 2013–2015 (http://flagship-project.eu/)

Imagine Chicago

Imagine Chicago was initiated by Bliss Browne in 1992 to cultivate hope and civic engagement in Chicago and to help realize an economy "in which nothing and no one was wasted". The pilot project was an intergenerational, intercultural appreciative inquiry which engaged teenagers at risk in conversations with community leaders in 40 neighborhoods regarding their hopes for the city's future. The pilot demonstrated the power of constructive and creative communications to create a shared sense of identity and hope among divergent populations. It led to a wide variety of subsequent project initiatives in Chicago in partnership with schools, churches, museums, community groups, and businesses which embedded constructive intergenerational communications practices within projects which moved to action on behalf of community-articulated visions. Imagine Chicago's work has inspired a self-organizing Imagine movement on six continents which continues to expand two decades later.

Context

In 1992, Bliss Browne, a Chicago banker, priest and mother, was concerned that increasing numbers of young people in Chicago were being lost to violence and drugs and written off as a "lost generation." Patterns of discrimination and isolation by race, age, economic status and ethnicity, were becoming institutionalized in housing, neighborhood demographics, and political boundaries and leading to a dearth of social imagination and productive social capital. How could people, in an increasingly partisan and divided social politic, learn to think about Chicago 'as a whole' and see every citizen as a potentially valuable contributor to Chicago's future? What would it take for isolated young people to imagine a viable future for themselves and to be willing to work with others to create it? What role could imagination play in

Background information

Name: Imagine Chicago

Organizer: Imagine Chicago

When: January 1992 – May 1994 (pilot process)

Where: Chicago, USA

Who: Bliss Browne, Imagine Chicago

Additional information: www.imaginechicago.org

Initiative characteristics

PE category: Public Consultation

Mechanism: IMAGINE (Appreciative Inquiry, AI)

Main purpose of initiative: Awareness raising, community building, dialogue,

Geographical scale: Local/urban

Organizing entity: Non-profit organisation

Target groups: Lay publics

H2020 Societal Grand Challenge(s):

- Europe in a changing world inclusive, innovative and reflective societies

regenerating civic commitment? How could it be harnessed and connected in a way that inspired innovation for public good?

To explore these questions, Bliss organized a conference on faith, imagination and public life – to explore images of Chicago's past that had shaped collective imagination and action and images of Chicago's future which inspired civic commitment. A compelling vision that emerged for her from reflection at the conference was the recycling symbol as an image of "God's economy", in which nothing and no one was wasted. How, she wondered, could such an economy be created? Persuaded of the importance and possibility of imagining ways to bring such a vision to life, she gathered around herself a volunteer design team, from many sectors, willing to serve as co-creators of a new civic initiative, which came to be known as Imagine Chicago. The animating vision required thinking 'from the whole' and working across well established divides.

The interdisciplinary design team spent a year reflecting together on the current state of the city and what might constitute an inclusive and attractive civic engagement process. Some important considerations included addressing widening economic and generational divides, and disarming the widespread public cynicism which often undermined new initiatives. The design team hoped it might accomplish both by engaging young people at risk as agents of inquiry in an appreciative intergenerational inquiry process that gathered hope and built needed connections.

Aims and mechanisms

The aim, as stated, was to help regenerate Chicago as a community
- where every citizen, young and old, could apply their talents to create a positive future for themselves and their community;
- where hope came alive in the flourishing and connecting of human lives; and
- where young people, and others whose visions had been discounted, developed and contributed their ideas and energy.

From September 1992 to May 1993, the design team created a process of civic inquiry as the starting point for engaging the city of Chicago in a broad-based conversation about its future. Two key insights emerged from the design phase which shaped the process design: first, that the pilot should discover what gives life to the city (as opposed to focusing on problems), and second, that it should provide significant leadership opportunities for youth, who most clearly represented the city's future. It was hoped that positive intergenerational civic conversation could provide a bridge between the experience and wisdom of seasoned community builders, and the energy and commitment of youth searching for purpose, yielding deeper insights into the collective future of the community.

Two types of pilots were designed and implemented in 1993–1994: a citywide "appreciative inquiry" process to gather Chicago stories and commitments, and a series of community-based and -led processes. In each case, young adults and community builders in Chicago shared their experiences and hopes about the city as a whole in a setting of mutual respect. The citywide interview process involved approximately 50 young people, ages 12–22, who interviewed about 140 Chicago citizens identified by members of Imagine Chicago's design team as "Chicago glue". These included artists, media executives, civic and grassroots leaders, politicians, business and professional leaders, and other young people. The interviewees represented over half of Chicago's neighborhoods. They were brought into the process via a letter of invitation sent by Imagine Chicago. The young people were identified and recruited from youth organizations. All members of the design team, and the young interviewers, participated as volunteers. No young person missed a scheduled interview. The modest administrative structure supporting the process was funded by local private philanthropists.

The process was intentionally appreciative, seeking to locate, highlight, and illuminate the best of what had worked in the past to ignite the collective imagination of what might be. The aim was to generate knowledge that could inspire participants to envision a collectively desired future and successfully translate those images of possibility into practical actions. Imagine Chicago's interview protocol was initially drafted by the design team. It was field tested and significantly improved by the teenage volunteer interviewers who created a protocol they felt comfortable using.

Youth volunteers also distilled the results of the interviews for public dissemination in ways that built their skills, inspired action, and re-

inforced commitment. Their summary was shared in three public events including a citywide "Imagination Celebration" to which all interviewers and their interviewees were invited. Young people demonstrated their power as effective agents of hope and inspiration if they could be released from the negative stereotypes in which many held themselves and were held by others.

Results

In late 1994, a formal process evaluation gathered feedback on the effects of Imagine Chicago's intergenerational inquiry on those involved. Interviews and focus groups were conducted with participants from the citywide interview process as well as from one of the community-based pilots. Imagine Chicago's Board of Directors, newly formed, also did its own evaluation.

The IC Board identified two distinct levels of impact: visible outcomes and products (concrete), and "subterranean" outcomes (less measurable but perhaps more significant). In both tangible and subtle ways, Imagine Chicago had inspired hope and a sense of commitment and dedication to a greater Chicago community. Three outcomes were especially noteworthy:

A. Shared identity:
The conversations facilitated by Imagine Chicago brought people together across boundaries to reflect on their relationship to the city as a whole. The connections that were made were uniformly positive because the meetings were grounded in mutual respect and valuing, and solicited positive visions and stories that people were eager to share. Participants found their Chicago citizenship provided common ground.

The appreciative intergenerational conversations prompted a mindset shift among many participants. Participants, who may have expected to feel separated from their conversation partners by age, culture, geography or background, instead experienced powerful and positive relationship connections. This, in turn, shifted their sense of possibility about their own and their community's future. They began to understand the commonalities between their visions for the city's future, and be encouraged by their respec-

tive commitments. Experiencing an "undivided" Chicago conversation" seems to have nurtured hope in the possibility of sharing ownership of the city's future. The process modeled the hope held by many participants, and expressed by one, of "a new Chicago in which all people can (and would) participate." Others commented: "It was helpful to pull together all of our visions and create understanding for those who had not shared your experiences." "My sense of "we" has broadened immeasurably, and my sense of "they" has all but disappeared." "The interviews made me feel part of a larger whole, working towards a better future."

B. Intergenerational Partnership and Accountability:
It was important that intergenerational teams led by young people conducted the interviews. "I gained inspiration and enthusiasm from the commitment of the young people." The conversation opened lines of communication. Both the young people and the adults involved commented that they gained an appreciative understanding of the other generation. As Rev. Addie Wyatt said, "Yes, I gained hope too. The thing we lived for...hopefully will be shared by the young person and enhanced through them". A young person commented, "It has made me think about the youth and how much people care about us". The adults talked about their understanding that youth are vital partners in creating a vision of the city's future, and that youth need to be viewed as community organizing partners. In the citywide interview process, a frequent interview response to the question "What image captures your hopes for the city's future?" was for the adult interviewee to point to the young person and say "You!"

C. Creating new possibilities and methods of civic conversation:
Shifting civic conversation away from problem solving to collective visioning about a shared future created energy and opened possibilities. Learning to ask and answer positive questions, and to engage in active listening, was a subtle and welcome shift for many. A significant by-product was an obvious collective ease and goodwill among all those who had participated, which was evidenced in the May 7, 1994 gathering of all those from the citywide interview process. Constructive civic conversation, in a diverse group, created momentum and interest in making commitments to bring

the visions to life. A number of people who were involved in the interview process began to apply appreciative inquiry within their own organizations. New organizations sought out Imagine Chicago to be trained in the process.

It was suggested that these changes were caused by the contagious mindset of positive question/positive image/positive action that Imagine Chicago personified. This belief brought to the surface deeply held hopes and values, and created connections among people who could band together to bring the hopes to fruition. In some cases, that led to very practical projects in which the hope became focused, as in the formation of an Englewood Youth Collaborative. In other cases, it led to less immediate results but demonstrably improved communication skills and community interest among those involved. "It has made me understand life better and see Chicago as a positive place." "I have seen mindsets change, including mine."

Other important outcomes for youth included a sense of ownership of the greater community, empowerment to change conditions in the city and create a young vision for Chicago, intimate connections in a broader community, successful team work through planning and organizing, greater ease in traditional social situations, greater self-esteem and self-confidence, self-expression and creativity demonstrated in public and an appreciative understanding of older generations.

Other important adult participation results included an opportunity to express hopes and dreams for the city, potential to influence a newly inclusive community, a renewed commitment to making a difference, a re-awakened sense of accountability to one's own possibilities, an appreciative understanding of the younger generation, and more confidence in young people as positive civic resources.

But the interviews only took the first step – of understanding what was possible, and imagining where that could lead in the future. There was no structure within which to create that future. Imagine Chicago learned that the appreciative intergenerational interview process needed to be embedded within structures that could move more readily to action. Subsequent initiatives did this.

Advantages

This process successfully mobilized hope and motivating visions and created contexts in which those hopes could inspire others. It taught many the power of constructive intergenerational public communication. Participants gained trust, connected to a greater whole from which they could learn, draw courage and recognize that their individual effort could be leveraged and exalted when put together with others.

The interview process, though limited because no context had been created for shared action on behalf of the articulated visions, still inspired a wide variety of subsequent self-organizing Imagine initiatives both in Chicago and abroad. In Chicago, it led to dozens of idea-to-action learning partnerships with schools, churches, museums, community groups, and businesses which involved a wide range of individuals and institutions ...grassroots leaders wanting to improve their neighbourhoods and learn from the innovations of other committed citizens ...public schools wanting to forge deeper community connections… …immigrant and faith communities struggling to become civic participants ... school children and parents trying to understand and impact the systems and communities of which they were a part.

Obstacles

The design team sought perspective on Imagine Chicago's viability as a concept and whether it would attract requisite endorsement and financial support. A retired business executive and member of the design team suggested meeting with community leaders, including dozens of senior business executives with a reputation for vision and integrity, to discuss the vision for Imagine Chicago. Those conversations brought into focus an understanding of prevailing beliefs, practices and obstacles that might undermine our efforts and to which we needed to be prepared to respond. Briefly summarized, these articulated challenges and our reflective responses included:

1. Challenge: Financial support may be hard to find. Local funders are disinclined to work together and prefer well-defined programs and outcomes.

IC VIEW:

a. Volunteers can lead the pilot project. If the idea proves worthy, there will be a credible story to tell funders. The pilot will gather support through participation.
b. A major local foundation has already expressed strong interest. We will involve them as a design partner and seek their advice about involving their philanthropic colleagues.
c. We choose to operate from an expectation of abundance, assuming funding partners in mission exist and simply need to be located.

2. Challenge: Only "important" people can make big change happen; "little" people's efforts never add up to enough.

IC VIEW:

a. There are many kinds of power. The power that changes community is usually the imagination and commitment of ordinary people. If every citizen were to envisage and implement even a single small positive change in his or her local community, the quality of life in the city would improve dramatically. As Margaret Mead said, "Never doubt that a small group of citizens can change the world. Indeed, it is the only thing that ever has."
b. Shifting mindsets can shift cultures and is a low-cost high-impact way of doing so.

3. Challenge: Any new venture threatens existing non-profits. They will worry that if they support your project, theirs may get less funding. Social agendas are territorial domains; those already in charge of "fixing the problems" want money to continue to flow to them to do so.

IC VIEW:

a. Imagine Chicago will only be institutionalized if it is clear it has an important and workable mission that is not duplicative of existing efforts.

Part of the design team's responsibility is to speak with organizations who might see IC as competitive and determine how it can help support and leverage their work. We will make clear that IC is still "in design", seeks to complement not undermine established efforts, and welcomes collaborative partners.
b. Imagine Chicago does not have a content agenda. We bring process and connectivity to existing efforts.

4. Challenge: Imagination is a luxury. Limited resources and attention should focus on urgent problems that need fixing.

IC VIEW:

a. Humans can only create what we can first imagine. Asking people for their visions and holding them accountable to that hope in a public way can unleash both imagination and energy for change.
b. Focusing on problems is enervating to human organizing because it magnifies what we don't want and isn't working. Energy and movement are activated by focusing on what we do want and how to make it happen.

5. Challenge: Talk is cheap; only action matters.

IC VIEW:

a. Dialogue stretches the imagination, reshapes our beliefs and generates new ideas. We act on what we believe and see as possible.
b. Dialogue uncovers the assumptions and motivations that lead to action; it offers an opportunity to learn and broaden connections and understanding.
c. Sharing ideas increases the likelihood of acting on them. A community of solidarity is often required to give people the courage to try something new.

6. Challenge: Businesses and politicians are focused on short term results; this process requires long term commitment and imagination and may therefore not be supported.

IC VIEW:

a. Chicago has a distinguished history as a city that has "made no small plans" and has articulated and implemented long term visions. We can build on that.
b. Urban sustainability requires long term visionaries.
c. Business understands that hope is the precondition for any investment.
d. We won't seek city sponsorship because Chicago politics are racially polarized. We will, however, offer politicians good faith opportunities as citizens to be involved.

7. Challenge: This project is spiritually motivated. Religious overtones may limit the general public's willingness to participate. Most funders have prohibitions against funding faith-based efforts.

IC VIEW:

a. Imagine Chicago asks questions of meaning, value and purpose but has no proselytizing agenda. The hungers to belong and make a difference are foundational to every human being. Public life can benefit by examining and discussing the beliefs and assumptions underlying it.
b. We create the city we believe in. We need public processes that discover what citizens care about and believe is possible so we can harness imagination for needed social change.

8. Challenge: Politics thrive on division. It will be very challenging to get anyone advocating for the whole.

IC VIEW:

a. Democracy depends on active citizenship. Effective citizens see the big picture.
b. Dividedness shuts down possibilities for discovering common good. While we may be educated into division, a study of living systems and the human search for universality shows that wholeness is in the nature of things. The prevailing paradigms seem fixed but are mutable when brought to consciousness. We want to challenge people to think again about this underlying wholeness and what gives life to the city as a whole.

The design team trusted that transforming possibilities could be brought to consciousness within an environment in which people expected something generative to emerge. Transformational leadership challenges people to believe that something new is possible by virtue of their choices. It holds out both a vision and process for community regeneration without prescribing the outcomes because the process is open to what cannot be known in advance. We entered the design and pilot phase of Imagine Chicago with a spirit of discovery and listening, trusting life, valuing learning more than success. Being part of a singularly constructive community of transformers gave us the courage to try. We needed a concrete project or two to begin to embody and test our beliefs.

IMAGINE CHICAGO addressed the challenges, in a spirit of discovery, through collaborative projects that invited individuals and institutions to understand, imagine and create the future they valued. Learning communities with structured exchanges of ideas, resources and experiences brought hope alive, and capacities and commitments into view, which expanded what was possible to imagine and create.

Innovative dimensions

Imagine Chicago is about vision, creativity, and inspiring citizens to make positive change. It is about investing in one's community. It is about building relationships with others across the social, economic, racial, ethnic, and generational divides that so often keep us apart. It is about building communities through building these relationships, transforming not only individuals but also the neighbourhoods, towns, and cities in which we live and grow.

Imagine Chicago created frameworks for learning exchanges and acted as an active listener for what is practical and possible rather than putting itself at the center as a source of knowledge and expertise. New possibilities emerged out of constructive dialogue within uncommon partnerships that bridged generational, cultural, racial and geographical boundaries. A simple approach to learning and engagement evolved into a practice which has proven helpful to many people in many different cultural contexts, and which moves from idea to action:

• Understand what is (focusing on the best of what is)

- Imagine what could be (working in partnerships with others)
- Create what will be (working together to implement what is most valued)

Understand

As in the interview process, all projects begin with and are grounded in asking and teaching others to ask open-ended, asset and value-oriented questions about what is life-giving, what is working, what is generative, what is important. The focus is on asking positive questions that encourage sharing of best practices, articulation of fundamental values, and which reveal the positive foundation on which greater possibilities can be built. For example, what is something your child has accomplished that you are especially proud of? What about your family, this school, is especially effective in encouraging children to learn? What questions interest you most right now?

Imagine

Oliver Wendell Holmes suggested long ago that "a mind once stretched by a new idea never regains its original dimensions". New possibilities are inspired by hearing questions or stories that cause us to wonder and stretch our understanding beyond what we already know. When we are invited to articulate and hear from others what's important and is working, we readily imagine how even greater transformation and innovation can happen. Grass roots leaders discussing what they have helped change on their block inspires others to try and make a difference. Young parents sharing stories of how they are caring for their children leads others to good parenting practices.

Create

For imagination to help create community change, it needs to be embodied in something concrete and practical, a visible outcome that inspires more people to invest themselves in making a difference.

Imagine Chicago's process and its lessons learned can be helpful, but replication shortchanges human imagination and co-creativity, which should be always new but can be inspired by what has been.

If one word characterizes Imagine Chicago's work, it is "hope." Across its varied projects and programs, Imagine Chicago insists on asking unconditionally positive questions to jog individuals out of more conventional, problem-focused mindsets, reawaken their belief that positive change can happen, energize people's commitment to creating what they envision in the places they call home.

Two decades ago, Imagine Chicago launched a process whereby urban adolescents met, interviewed, and conversed with a wide range of adults who were recognized as providing the city's "civic glue." Guided by adult mentors, these young people asked probing, expansive, and intentionally positive questions about Chicago's history, culture, resources, and possibilities for change.

These interviews were influenced by an approach called "appreciative inquiry." Part research method and part philosophical orientation, appreciative inquiry had been an effective lever for motivating change within the non-profit and for-profit sector. Imagine Chicago applied this tool to larger public spaces like neighbourhoods and cities. Inspired by this work, similar "Imagine" processes have taken place in specific neighborhoods of Chicago and in towns and cities around North and South America, Europe, Asia, Africa, and Australia.

While much in Imagine Chicago's approach is new, it springs from very fertile ground. In addition to the "appreciative inquiry" approach already mentioned, intergenerational interviewing shares important principles with the fields of youth development/youth civic engagement, asset-based community development, and civic engagement/civic dialogue. Briefly describing key tenets of these fields may clarify Imagine Chicago's particular contribution.

Intergenerational interviewing sees young people as important assets for the communities in which they reside. By seeing urban adolescents as contributors to the public good rather than "problems to be fixed," Imagine Chicago upholds a central tenet of the youth development field. Concisely put, youth development specialists argue that to be "fully prepared," adolescents must acquire a broad set of "competencies" across cognitive, emotional, physical, civic, social, cultural, and vocational realms. Youth-serving

organizations must partner with other institutions (schools, community groups, families, and so forth) to provide the "inputs" necessary for adolescents to acquire these competencies. These inputs include things like access to basic care and services; high quality instruction and training; opportunities to develop caring relationships and social and strategic networks; and challenging, age-appropriate opportunities for meaningful involvement in community life.

By conceiving of young people's contribution to civic life as critical to their own personal development, Imagine Chicago's work falls on the end of the youth development spectrum chiefly concerned with youth civic engagement. Youth civic engagement programs differ considerably. Some stress involvement in voting and other forms of political participation; others emphasize voluntary service in community institutions and causes; still others urge youth to redress social and civic inequity. Yet a common belief underlies these strategic differences: to strengthen young people as well as communities, young people must regard themselves as civic actors and be equipped to carry out meaningful, sustained, civic work.

Intergenerational interviewing in fact entails strengthening young people's skills, dispositions, and civic capacities. Adolescents are trained in how to conceptualize and conduct interviews, listen respectfully, gather and analyze data, utilize social networks, and participate in community conversations. By definition, this work must be done in partnership with adults. By interviewing adults who have rich histories with the life of the city, young people become inspired to imagine their own life in the city in new ways. Thus, instead of linking their future success to "growing up and getting out" of the neighbourhood, young people become inspired to invest in the places where they have been raised, and commit to making these places better. Adults in turn feel motivated by young people's hope, energy, and vision. Building relationships between adults and young people fuels shared a commitment to a particular geographic place. This contribution links Imagine Chicago's work with another important field: asset-based community development.

Intergenerational interviews focus participants' attention on a community's strengths, resources, and capacities rather than the problems and deficits. Interview questions urge participants to think as expansively as pos-

sible – beyond specific organizations, neighbourhoods, or interest groups – to imagine their city as a whole. These processes involve people who are typically divided by ethnicity, class, age, and countless other dimensions. Public learning processes that grow out of these interviews identify a collected sense of community resources. Projects that grow out of these processes seek to strengthen particular civic institutions (for example, schools or museums), fueled by an energized group of citizens motivated to bring their vision into being.

This aspect of Imagine Chicago's work resonates with positive visioning processes utilized since the 1970s in cities. Lodged within city planning processes, these large-scale public processes have involved diverse citizens across a host of communities and sectors. Neither "top down" nor "bottom up" but rather "center out," city-wide visioning processes have also involved strategic planning for the policy and resource change deemed necessary.

Visioning processes share an asset-based approach to community building that drives change work in primarily low-income communities across the United States. Through "community mapping" and other stock-taking processes, neighborhood residents survey existing services, broadly identify resources (human, physical, financial, and so on), and strategically organize for expansion and improvement of services offered. Traditionally, this work has been neighbourhood-based, adult-led, and focused on improving material resources and services. Increasingly, however, "hybrid" organizations linking youth and community development have urged the meaningful inclusion of young people in community change efforts. This newer arm of the community-building field also calls for broadening the types of community resources surveyed, and identifying a host of less tangible assets communities may build upon to enrich the lives of their members.

Imagine Chicago joins these efforts by its emphasis on intergenerational partnership and its focused appreciation of the cultural, historical, and spiritual resources citizens can draw upon. More uniquely, perhaps, Imagination Chicago highlights the importance of public conversation to fuel the imagination, creativity, and hope that will motivate citywide efforts. In this respect, intergenerational interviewing calls to mind a third burgeoning field: civic dialogue.

Imagine Chicago's work reflects a belief that citizen voice is an essential part of shaping public life. Indeed, imagination-spurring civic exercises are conceived as part and parcel of the democratic process. Intergenerational interviewing is one among many vehicles for engendering public dialogue on important civic issues. Imagine Chicago's particular process begins with discussion among a small group of individuals, but it eventually leads toward more public forums where larger groups of people come together to talk, reflect, and begin planning for change.

Over the past decade, as theorists and practitioners have lamented declining public involvement in civic life, a host of organizations have sought to orchestrate responsibly facilitated forums where citizens come together to reflect, discuss, and debate matters affecting the public good. Differences in content, style, and end goal abound. Some efforts facilitate public discussion of contentious moral issues, like abortion. Others address contentious issues that continue to divide American society, like race relations. Still others address policy problems on the local, regional, or national level. Some public forums are face-to-face, while others use new technologies like the Internet to extend conversation beyond geographic boundaries. Some direct dialogue toward concrete action for change; others see dialogue itself as a worthy democratic product.

Imagine Chicago's intergenerational interviewing process affirms the power of citizen dialogue. Its emphasis on building relationships across traditional divides helps young and old learn from each other. In so doing, Imagine Chicago enlarges the community of citizens who are inspired to act on behalf of the public good.

Orientation towards societal challenges

- Health, demographic change and wellbeing
- Food security, sustainable agriculture and forestry, marine and maritime and inland water research, and the Bioeconomy
- Secure, clean and efficient energy
- Smart, green and integrated transport
- Climate action, environment, resource efficiency and raw materials
- Europe in a changing world – inclusive, innovative and reflective societies
- Secure societies – protecting freedom and security of Europe and its citizens

The process is useful to all but most specifically targeted to #6. building inclusive, innovative and reflective societies

Similar initiatives
- Choices for Bristol (the ideal Bristol), 1994–1996 (http://www.karloberger.com/Choices_for_Bristol.htm)
- Creating a Neighbourhood Action Plan for Park Wood, UK 2009 (planning for real, http://www.planningforreal.org.uk/projects/maidstone-borough-council-creating-a-neighbourhood-action-plan-for-park-wood/ and see more projects: http://www.planningforreal.org.uk/ and see more projects: http://www.planningforreal.org.uk/

Bonus Advocates Network

BONUS is a joint Baltic Sea research and development programme that is funded by EU member states around the Baltic Sea and the EU. One of its key priorities is stakeholder involvement in relation to research. The Advocates Network was a novel approach to promote and enhance activities of a macro-regional research and development programme in national settings. The advocate's task was to facilitate communication between the national stakeholders and BONUS and advance the creation of stakeholder platforms at a national level. The network consisted of 600 stakeholders who have contributed to the policy-driven strategic research agenda.

Context

BONUS is a joint Baltic Sea research and development programme that is funded by the EU member states surrounding the Baltic Sea and the European Union (FP7). One of its key priorities is stakeholder involvement, given the role it can play in improving the relevance of research at the decision making level and the society at large in stimulating discussion and enabling stakeholders to contribute to the research. BONUS aims to facilitate the communication between researchers and end-users across the programme at all levels. With BONUS funding and coordination by the BONUS Secretariat and the BONUS Steering Committee, a BONUS advocate was appointed to each BONUS member state (Denmark, Estonia, Finland, Germany, Latvia, Lithuania, Poland and Sweden) to facilitate the communication between the national stakeholders and BONUS. Advocate's primary task was to advance the creation of stakeholder platforms on the national level and conduct stakeholder mapping analysis in their respective countries. Advocates had an important part to play in stake-

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Background information

Name: Bonus Advocates Network

Organizer: BONUS

When: September 2010 – November 2011

Where: The Baltic Sea region coastal, EU member states

Who: Maija Sirola, BONUS, the joint Baltic Sea research and development programme

Additional information: http://www.bonusportal.org/files/1447/BONUS_advocate_report_2011.pdf

Initiative characteristics

PE category: Public Consultation

Mechanism: Stakeholder consultation (consultative panel)

Main purpose of initiative: Consultation

Geographical scale: Europe

Organizing entity: The joint Baltic Sea research and development programme

Target groups: Stakeholder organisations, experts, public officials

H2020 Societal Grand Challenge(s):
- Europe in a changing world inclusive, innovative and reflective societies;
- Health, demografic change and wellbeing;
- Climate action, environment, resource efficiency and raw materials;
- Food security, sustaniablity agriculture and forestry, marine and maritime and indland water research and the Bioeconomy

holder involvement during the strategic phase (2010–2011) of BONUS when the research aims and strategic research agenda of the programme were formed in co-operation with researchers, policymakers, funders and other stakeholders.

Aims and mechanisms

The BONUS advocates network was a novel approach to promote and enhance activities of a macro-regional research and development programme in national settings. The objectives were to:

- identify the key national stakeholders for BONUS
- facilitate the involvement of the key stakeholders in BONUS activities at the national level
- organise national stakeholder workshops and media events in cooperation with the national BONUS member and the BONUS Secretariat
- approach additional national funding sources for BONUS
- identify any bottlenecks for integrating competitive and non-competitive funding, and initiate actions for removing them
- implement the dissemination of the BONUS activities in national languages
- initiate feasibility studies, if needed, for advancing, cross-sectorial integration of Baltic Sea issues

The BONUS advocates were selected on the grounds of their familiarity with the marine & maritime governance and research and technical development system in their respective countries. They represented various marine/maritime sectors including environment, transport, agriculture and forestry. Their work tasks were based on national plans produced by each advocate at the beginning of the appointment which then were approved by the BONUS Steering Committee. The plans included individual timetables for

1) stakeholder mapping,
2) national workshops and conferences,
3) meetings with stakeholders,
4) meeting with funders and
5) communications plans.

The national plans also reflected the individual roles of advocates and the emphasis and focus of their work according to the national realities (i.e. cultural settings) and needs in each of the participating country (e.g. funding, BONUS awareness building among stakeholders etc.)

Results

In general, the experience of using advocates' network was very positive. It enabled a wide participation of a total of 600 stakeholders from the participating countries of the macro-regional programme – this has been an important part in the development of the programme's backbone, the policy-driven strategic research agenda (to which a total of over 800 stakeholders across the region has contributed to date).

It can be assumed that without the advocate work the amount of participating stakeholders would have been less and more one sided than it was during this period. Advocates also facilitated the communication between different stakeholder groups especially between science, management, business and policy, each in their own national settings. They created a links and gathered stakeholders to participate and converse on a common cause. Through the national workshops, a stakeholder platform was created through which it was easier to form views on national priorities.

A key tool for future BONUS stakeholder communication was achieved by completing a country specific stakeholder mapping. This allowed BONUS to continue to build and involve a community of individuals working cross-sectorally across the Baltic Sea region. Moreover, the advocate work on the funding development made a marked advancement in broadening BONUS funding base and including eco-innovation in its ambitious research programme.

Advantages

This approach allowed achieving the main goal – to involve stakeholders on the national level in the process of preparation BONUS strategic research agenda and created conditions for them to become familiar with the aims and objectives of the BONUS. This let us believe that they (or part of them)

will be further interested in the BONUS projects results. Positive feed-backs, active stakeholders' participation and rather high evaluation scores received from the survey done after the national workshop supports this assumption. In summary, the advantages are clear of operating in this fashion in national settings as opposed to work carried out only centrally from and by the dedicated Secretariat of the programme.

Obstacles

For instance, involving the science community and policymakers was viewed to be relatively easy, but in some cases there were difficulties in involving specific sectors, e.g. business sector, in some instances the challenge was to transform their initial interest in to a real, longer-term commitment.

On general level, some obstacles related to the consistency of the plans and actions carried out was detected due to different cultural settings as these play a clear role in how the networks operate and how dialogue between different sectorial groups is and can be carried out.

Innovative dimensions

The network of national advocates is a novel experiment in a macro-regional research governance setting. It works particularly well when the macro-regional, centrally driven approach can not sufficiently reach all the key stakeholders in the national settings. In particular, and according to the feedback questionnaire in the end of the piloting, the advocate efforts related to identifying the key national stakeholders for the BONUS pro-

Photo Pixabay

gramme was perceived to be very good. On the Baltic Sea region level, it can be said that a broad invitation was sent out to include ministries, agencies, academia, NGO and environmental organisations, financial partners, industry, private financial partners etc. involving close to 600 participants in BONUS national stakeholder events, and activating several key groups such as ministries and related institutions was viewed very successful. This could have not been achieved through the central macro-regional Secretariat's effort alone.

Orientation towards societal challenges

- Health, demographic change and wellbeing
- Food security, sustainable agriculture and forestry, marine and maritime and inland water research, and the Bioeconomy
- Secure, clean and efficient energy
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- Climate action, environment, resource efficiency and raw materials
- Europe in a changing world – inclusive, innovative and reflective societies
- Secure societies – protecting freedom and security of Europe and its citizens

I.e. BONUS brings together the research communities of Earth system research in marine, maritime, coastal terrestrial, economical and societal fields to address the major challenges faced by the Baltic Sea region. The main aim of BONUS is to generate and disseminate knowledge and provide necessary know-how in order to resolve challenges in the way of sustainable use of the Baltic Sea ecosystem goods and services in the coming decade and beyond:

- Evaluating and developing relevant policies and collective governance
- Adapting to a sustainable way of living
- Adapting to the effects of climate change
- Restoring good environmental status of the Baltic Sea and its coasts

- Mitigating eutrophication that affects today nearly the entire Baltic Sea
- Achieving sustainable and safe use of the exploited coastal and marine ecosystem goods and services
- Planning of the use of marine space that fulfils the intensifying and diversifying needs from society
- Making fisheries management effective in order to secure the stability of the ecosystem and reproduction capacity of the Baltic Sea fish stocks
- Achieving safe maritime traffic imposing no risks to the environment
- Minimising the environmental threat of increasingly diversified use of chemicals and new materials
- Creating cost-efficient environmental information system

Similar initiatives
- iFUTURE (in Spread project), 2011–2012 (http://www.sustainable-lifestyles.eu/project-content/project-approach.html)
- BeWater project - Making society an active participant in water adaptation to global change, 2013–2017 (http://www.efi.int/portal/research/projects/?todo=3&projectid=213)

Owela Open Web Lab

The Owela Open Web Lab is an online platform for open innovation that engages users, developers and other stakeholders in co-creative processes in the design of new services and products. Owela allows citizens worldwide to collaborate on a topic and influence the innovation processes, and the platform has currently a pool of over 2,000 registered users. The platform allows users to take active part in the development of new products, and the early involvement allow for greater collaboration and co-innovation.

Context

Owela is an online platform for open innovation and co-design with users, customers, developers and other stakeholders. It provides tools for understanding users' needs and experiences as well as designing new products and services together. Owela has been developed and is administrated by VTT Technical Research Centre of Finland. Project spaces can be either public or limited to a certain user group – users can be recruited for a specific project, or we can use the existing pool of registered users from previous projects.

Background information

Name: Owela Open Web Lab

Organizer: VTT, Technical Research Centre of Finland,

When: Ongoing

Where: Espoo, Finland

Who: Katri Grenman, VTT, Technical Research Centre of Finland,

Additional information: http://www.cloudsoftwareprogram.org/theses-and-articles/i/28685/1570/three-approaches-to-co-creating-services-with-users

Initiative characteristics

PE category: Public Consultation

Mechanism: Co-creation spaces

Main purpose of initiative: Consultation, knowledge co-production

Geographical scale: National

Organizing entity: Academic institution

Target groups: Lay publics

H2020 Societal Grand Challenge(s): All seven

Aims and mechanisms

Owela project spaces may be used as a co-design space from the first ideas until the final product testing or only in selected phases of the innovation process (from 1 week to a few months). Companies can utilize the Owela community in different stages of the innovation process:
- developing new innovations based on consumer needs
- testing early service concepts and developing them further with users
- testing and developing prototypes
- evaluating existing services
- marketing and consumer research

Owela can be combined with other user-centred design methods and utilized as a communication channel between face-to-face studies. User research can be done either publicly or, for confidential user studies, in restricted environments. Special versions for different languages can also be made easily.

Participants are recruited according to the needs of each individual project. There is an existing pool of over 2,000 users who have given their permission for future invites. These people can then be invited to participate in new projects through email. It's even possible to filter the users by age, gender or home town.

Sometimes the client wants to involve their current clients or a specific user group. In these cases it's not possible to find these people among existing users, as the system only has basic demographic information about them. Clients can either invite participants themselves or provide a mailing list of clients they want to invite to the project.

Projects are usually facilitated by experienced VTT researchers. In some cases, client companies also want to participate in the facilitation process and it's encouraged – especially if the participants want to ask questions pertaining to the company or its operations

Results

Each project is a separate entity and its outcomes and impacts must be evaluated on their own. On the whole, Owela has been used in dozens of cases and has been established as a reliable and effective way of gathering user input in very varying development and research projects. There is usually no formal evaluation, as the projects often aim for very practical results.

Advantages

Different projects have different goals, and accordingly also the benefits and advantages vary. There have been several projects that have generated a lot of media interest and concrete changes in products, services or ideas. Benefits have also been seen in how the mindset of clients has shifted from testing a service or product with users towards larger collaboration and co-innovation.

Obstacles

The biggest obstacle in some projects is in recruiting participants. Often the interesting research topics themselves motivate people to participate, sometimes the rewards for the most active participants encourage activity – but sometimes nothing seems to work. It can be because of the topic, because of the necessity of registering, or the time of the year. These situations require more effective and active recruiting efforts as well as more involved facilitation.

Innovative dimensions

Owela is a very democratic platform, as it allows all kinds of people from all over the world collaborate on a topic and get their voices heard. Participation is not dependent on time or place (of course some limitations apply, as projects are open for a limited time period).

Additional tools developed on top of the Owela platform enable us to use different methods for user involvement, making it possible to create for example preference and experience maps. We can incorporate social media, chats, questionnaires and polls on the site and thus make the tool an even more comprehensive platform for user-centric research.

Orientation towards societal challenges

- Health, demographic change and wellbeing
- Food security, sustainable agriculture and forestry, marine and maritime and inland water research, and the Bioeconomy
- Secure, clean and efficient energy
- Smart, green and integrated transport
- Climate action, environment, resource efficiency and raw materials
- Europe in a changing world – inclusive, innovative and reflective societies
- Secure societies – protecting freedom and security of Europe and its citizens

Owela's impact is largely related to the research projects it is used for. Throughout the years, projects have touched, to name but a few, the topics of health and wellbeing, food, bioeconomy, ecological and environmental choices, societal responsibility, services, and security.

Similar initiatives
- Physical showroom Ihme , Finland (http://www.cloudsoftwareprogram. org/theses-and-articles/i/28685/1570/three-approaches-to-co-creating-services-with-users)
- Living Labs, Finland (Eija Kaasinen et al. Three approaches to cocreating services with users, pp. 6–7. Available at: http://www.cloudsoftwareprogram.org/theses-and-articles/i/28685/1570/three-approaches-to-co-creating-services-with-users)

Public Deliberation

Citizens' Dialogue on Future Technologies

The objective of the Citizen Dialogue was to initiate a wide and continuous deliberation with the public regarding prospective challenges in relation to technology development and research and innovation policies. This was facilitated through regional citizen's conferences where different topics were discussed by citizens in collaboration with experts. The outcome of the project was a citizen report with wishes and recommendations that was delivered to key decision-makers. The deliberations both facilitated actual dialogue between citizens and ministry as well as discussions between citizens and researchers.

Context

The goal of the project "Bürgerdialog Zukunftstechnologien" (Citizens' dialogue on future technologies) was to initiate a wide and continuous discourse with the public about prospective challenges regarding technology development. These dialogues made it possible for scientific and technological approaches to better incorporate the needs, concerns and expectations of citizens to a certain degree. For this, regional dialogue events concerning different technology fields were conducted by the German Ministry of Research and Education during which participants were first informed about relevant research and key technologies in order to then articulate their opinions and ideas and to represent them in a public dialogue together with representatives from politics, the economy and science. Topics of the three dialog rounds were energy technologies for the future, high-tech medicine, as well as demographic change. The citizens were chosen representatively.

Background information

Name: Citizens' Dialogue on Future Technologies

Organizer: German Ministry of Research and Education

When: 2011–2013

Where: Germany

Who: Julia Hahn, Institute of Technology Assessment and Systems Analysis (ITAS-KIT)

Additional information:
http://www.itas.kit.edu/english/iut_completed_deck11_buedizut.php

Initiative characteristics

PE category: Public Deliberation

Mechanism: Citizens' Summit

Main purpose of initiative: Dialogue/deliberation

Geographical scale: National

Organizing entity: National governmental body

Target groups: Lay publics, experts

H2020 Societal Grand Challenge(s):
- Health, demografic change and wellbeing;
- Secure, clean and efficient energy

Aims and mechanisms

Main aims were dialogue and deliberation with a wider public about research and innovation policies. Recruiting was done by post and telephone and advertisement in newspapers. In the framework of six to eight regional citizen conferences (with approximately 100 participants each), the respective topics of the dialogue were mutually discussed by citizens with the assistance of experts. Also, the participants had the possibility to state first courses of action for how politics and society should deal with future technologies. This stage was accompanied by an online consultation offering even more citizens than only the ones invited to the dialogues to participate in the process, independent of time or location.

During the third stage the citizens – in a concluding national citizens' summit – developed a citizens' report based on the outcomes of the regional citizens' conferences and the online consultations. All stages of the dialogue were accompanied by a circle of experts, which consisted of experts from science, economy, environmental protection and civil society. During the detailed implementation of this general model, the procedure was adjusted to the particular topic of the dialogue, e.g. in one case the optional, open format of the Bürgerwerkstätten (citizens' workshop) was added. There was also a consulting group made up of experts that could comment on the outcomes of the regional dialogues during different stages of the process.

Results

There was scientific monitoring of the respective topics of the dialogue, the evaluation of the process on the basis of qualitative methods and assistance concerning design and implementation of the individual modules of the dialogue by us (ITAS-KIT).

Impact on the institutional level can be regarded on the individual level: the ministry tried this new format and is now more engaged in participatory processes. The minister came to the final event (citizens' conference) and was introduced to the outcome (a citizens' report with wishes and recommendations) and commented on this.

On a regional level the topic of demographic change had the most impact. Participants and experts involved stayed in contact after the events to further discuss.

Advantages

The main advantage was that it was a long-running process, which allowed for an actual dialogue between citizens and ministry to take place. Throughout the process a re-framing of topics took place according to the citizens' perspective, which gave the outcomes an orientation towards citizens' viewpoints and perceptions. Therefore the outcomes went beyond simply letting citizens comment on topics and measures set be the ministry and included an adjusting and prioritizing according to their foci.

Obstacles

It was difficult to achieve representativeness. Throughout the process it was tried to solve this with moderate success. A challenge was bringing together citizens, ministry representatives and experts on one level. It was a learning process for all, which was made a bit easier by having a long-running process.

Innovative dimensions

It was the first time a German ministry initiated and co-designed such a large participation process. It was also new in terms of length of the process, involvement of the ministry and the different elements used.

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Orientation towards societal challenges

- Health, demographic change and wellbeing
- Food security, sustainable agriculture and forestry, marine and maritime and inland water research, and the Bioeconomy
- Secure, clean and efficient energy
- Smart, green and integrated transport
- Climate action, environment, resource efficiency and raw materials
- Europe in a changing world – inclusive, innovative and reflective societies
- Secure societies – protecting freedom and security of Europe and its citizens

Similar initiatives
- Citizen conference on nuclear waste management, Belgium, 2009 (http://www.kbs-frb.be/otheractivity.aspx?id=293919&langtype=1033)
- Citizen conference on genetic data, 2003, Austria (http://www.oeaw.ac.at/ita/en/projects/consensus-conference)

GenSET

GenSet was launched in 2009 motivated by the underrepresentation of women in key STEM fields. The main aims were to raise awareness of gender issues in science, develop multi-stakeholder dialogue, improve gender equality polices and promote knowledge how institutions can address gender issues. This was achieved through novel participatory methods including consensus seminars, mentoring workshops and gender summit. The latter brought scientists, policy makers and gender scholars together in joint discussions of implementing evidence-led recommendations. The Gender Summit platform has expanded to North America, Africa, Asia-Pacific and Europe and into a movement for global change.

Context

The project was motivated by the persistent underrepresentation of women in key STEM fields, as researchers, and subjects and targets of research, and as decision-makers and leaders, as well as the apparent failure to mainstream gender into policies (as recommended in the EU Amsterdam Treaty) concerned with research and innovation quality. The research evidence showed that overlooking gender issues in science had negative consequences for the quality of research outcomes because science had more evidence for men than for women. The project was organized by Portia, an organization that was created in 1997 by a group of women scientists working at Imperial College London. The project was funded under FP7 Science in Society programme. It involved two types of participatory activities: an adaptation of the consensus conference format and mentoring workshops. The participants came from all levels and areas of STEM and were organised into Science Leaders Panel, Gender Experts Group, genSET Stakeholder Network, genSET Patrons, and Practitioners.

Background information

Name: GenSET

Organizer: Portia Ltd

When: September 2009 – February 2012

Where: Europe

Who: Elizabeth Pollitzer, Portia Ltd, UK

Additional information:

www.genderinscience.org
www.portiaweb.org.uk

Initiative characteristics

PE category: Public Deliberation

Mechanism: Consensus seminar

Main purpose of initiative: Awareness raising, dialogue, knowledge co-production

Geographical scale: European (Global)

Organizing entity: Not- for- profit company

Target groups: Lay public, experts, stakeholder groups, public officials

H2020 Societal Grand Challenge(s):
- Climate action, environment, resource efficiency and raw materials;
- Europe in a changing world – inclusive, innovative and reflective societies

Aims and mechanisms

The aim of the project was to:

1) Raise awareness of the research evidence showing how gender issues in science affect quality of science knowledge making, development and deployment of scientific human capital, institutional practices and process, and compliance with policy;

2) Develop multi-stakeholder dialogue between scientists, policy makers and gender scholars to establish evidence-based consensus on what actions are needed to address known gender issues in science;

3) Improve gender equality policies and their implementation in the context of research and innovation endeavours;

4) Promote education on how institutions can address gender issues;

5) Engage with practitioners in knowledge co-production aimed at development and adaptation of gender equality and gender mainstreaming best practices and sharing of experiences.

GenSET developed several novel participatory mechanisms. Firstly, the consensus conference format was adapted to create a series of consensus seminars in which the Lay Panel was made up of science leaders, selected from across Europe, who were new to the topic of gender, and Expert Panel was made up from world-renowned gender scholars. The Public included representatives from a diverse range of research and innovation organizations, holding a variety of decision-making roles within. The seminars were facilitated by experts in the participatory methodologies. The outcome was a consensus report written by the science leaders with 13 recommendations for institutional actions. The science leaders panel has also written to the European Commission recommending that the dialogue and evidence they were exposed to, as part of the genSET project should be made available to others.

The second novel method was a series of mentoring workshops for organisations, where gender equality practitioners in science institutions at the beginning of the gender equality work were mentored by gender experts to help devise institutional plans of action that suited their circumstances best.

The third novel approach was the Gender Summit platform for dialogue, which brought scientists, policy makers and gender scholars together to discuss research evidence and establish consensus on how to address identified gender problems in science and who should be responsible for implementing the recommendations. The first Gender Summit took place in 2011, exactly 10 years after the publication of the EU ETAN report, which demonstrated the 'leaky pipeline' phenomenon. The second Gender Summit took place in 2012 at the European Parliament to raise awareness and disseminate knowledge from genSET to national policy makers. This was made possible through the support of a group of parliamentarians from the key committees, in particular FEMM and ITRE, led by Britta Thomsen. The MEPs were discussing budget for Horizon 2020 and it was important to explain why gender equality and gender dimension was needed in the Horizon 2020 objectives. To raise awareness and appreciation of the importance of addressing gender issues in science, Portia produced reports that demonstrated consequences of gender problems on the continuum of research and innovation process, from creating ideas to opening new markets for science knowledge. Since then, the Gender Summit platform has been adopted in other regions, in particular North America, Africa, Asia-Pacific, and Latin America.

The fourth novel approach was to engage top-level institutions as Patrons of the project to highlight the concern and responsibility of research funding and research performing institutions for addressing quality issues in science endeavours. One such Patron was the European Science Foundation who was co-convener together with Portia of the first two Gender Summit events. Another was Research Council Norway, who in 2014 announced a new organisational strategy that incorporated gender into all its activities.

Results

On completion, the project has achieved all the planned outputs. However, the outcomes and impact created was much bigger than anticipated or hoped for, and was predominantly positive. In the European context, genSET helped invigorate interest in gender equality issues in science by link-

ing concerns over gender equality to research and innovation quality issues. The main theme for Gender Summit events has been "Quality Research and Innovation through Equality". The participation of scientists, science leaders, and science institutions was needed and made effective by demonstrating the availability of persuasive research evidence showing the benefits of addressing gender issues for science and society. Their involvement in the gender dialogue was new and contributed to strengthening the policy argument for the need to systematically mainstream gender into research and innovation. It influenced the thinking on gender equality issues at the European Commission just as the preparations for Horizon 2020 and European Research Area started. The timing was very good. The engagement of the community was achieved through public consultation undertaken as part of the first Gender Summit, which resulted in the Manifesto for Integrated Action on the Gender Dimension in Research and Innovation, which was presented to the Commissioner, Marie Geoghegan Quinn and placed on line for the public to sign. 4500 people signed the Manifesto within a year of going on-line. These signatures were a demonstration of the widespread concern and desire for action and offered a persuasive argument for policy makers at the Commission and the Parliament.

In collaboration with key stakeholders in other world regions, the Gender Summit platform has migrated to North America, where it was used to produce a Roadmap for Action agreed on by 650 participants attending the first summit in that region organised under the leadership of the National Science Foundation. In 2015 there will be three Gender Summits: Africa, Asia-Pacific, and Europe. This expansion has transformed the Summit from an event into a movement for global change, which draws on research evidence, multi-stakeholder consensus, and the desire to make sure that women and men, and society at large participate and benefit from research and innovation with equal opportunity.

Advantages

The main advantage of the combined top-down and bottom-up approach developed in genSET of bringing into the gender in science discourse lead-

ers and practitioners, experts and lay persons, as well as the different stakeholder groups (research performing, research funding, research using, research communicating), was the opportunity to create a diverse community of 'agents of change' and to highlight and integrate the different efforts that were being made to address specific and shared problems, and to share resources. The specific genSET outputs, such as the science leaders consensus report provided a blueprint for developing programmes of action tailored to specific institutional circumstances. This has been done, for instance by the University of Tromso, Norway. The genSET consensus report was also the inspiration for creating the Roadmap for Action for North America.

The public consultation undertaken as part of the first Gender Summit became a model for similar consultations to be carried out as part of Gender Summit – Asia Pacific and Gender Summit – Africa. The scientists who participated in the Science Leaders Panel contributed articles to the first-ever special issue publication on Gender in Science, as part of the Interdisciplinary Science Reviews journal. All these activities have generated media interest and were particularly widely reported through the Pan European Networks. The report produced for the Gender Summit at the European Parliament, From Ideas to Markets: the Gender Factor, has been translated to Korean, and the A-Z Guide Why Gender Matters to Research and Innovation has been translated into Dutch. The four Gender Summit that took place between 2011 and 2014 have attracted over 2000 participants from 45 countries, and involved 285 speakers. Consideration of gender are now included in policies driving key EU initiatives, in particular Horizon 2020, European Research Area, and Responsible Research and Innovation.

Obstacles

During the project, with the availability of funding, it was possible to mobilize and engage the target actors, stakeholders, and communicate objectives and outcomes, without undue budgetary pressures. The involvement of science leaders and leading science institutions have helped create a network and a community that continues to grow and contribute to the advancement of gender in science. The continuation of the efforts after the funding for

the genSET project has ended was helped through the support of various organizations, in particular regarding the Gender Summit, where the three European events held so far were supported by the European Commission, the Research Council Norway and Elsevier, but also the Bosch Foundation, and a whole range of institutions who made it possible for first-class speakers to attend. Of course, there were obstacles, in particular the gap that exists between the different regions in Europe, e.g. Nordic vs. Western, Western vs. East European, with regard to understanding gender issues in science and availability of resources and willingness to address them. Some barriers are due to history, cultures and language. For instance, the equivalent word for "gender equality" did not exist in Poland. It was only introduced formally in 2013. These diversities continue to exist. The assumption that 'science is gender neutral' still dominates science cultures and the research evidence showing the benefits of tackling gender bias in science knowledge making has to be continuously communicated and explained. The economic argument for addressing gender issues needs still to be more fully developed. Having invested in women's higher education, why are countries not using this talent pool to the full? The obligations for institutions to comply with existing gender equality and gender mainstreaming policies promoted through EU treaties and national regulation have to be complied with, and enforced if needed through incentives and penalties. Leaders can play an important role here, as demonstrated by their actions during genSET, but also subsequently and elsewhere. There are excellent examples available to show that this can have a dramatic impact on attitudes to gender equality at policy and institutional levels.

Innovative dimensions

GenSET was innovative for a number of reasons.

Firstly, it adapted the established consensus conference method to develop a series of seminars in which the 'Lay Panel' were science leaders ("lay" in terms of understanding gender issues) and the Expert Panel were gender scholars, and the Public were members of the science systems.

Secondly, it brought into the gender discourse scientists themselves and the gender equality issue was expanded to also ask: Did gender matter to science? The participatory method used was new to all three groups taking part; nobody has experienced such methodology before in their own work. This was risky but very rewarding in the end, and the method can be adapted to create consensus among actors at national contexts. Second innovation was to expand the mentoring method to create a mentoring workshop, were the mentees were practitioners trying to introduce gender equality actions in their institutions, who in almost all cases where hugely under-resourced and needed both evidence, information, good practice examples, expert advice, and guidance. Three such workshops were held, one for research-intensive institutions, which nevertheless were not adopting gender equality actions, one for institutions in predominantly Southern region and one for Eastern and Central region. In recognition of the poor resources for travel etc., one of the workshops was held using the Internet tool GoMeeting.

In addition, workshops were held in countries where religion played a strong role in determining cultural gender attitudes, in particular Poland and Ireland. The involvement of institutions in the Stakeholder Network was subject to Memorandum of Understanding, which was not a legal document, but nevertheless, required an agreement from an institution acknowledging the importance of the genSET objectives. GenSET demonstrated that the combined approach involving the scientists, gender experts and policy makers is needed, can work effectively, and through research evidence and consensus building represents a powerful force for change, as well as ensuring sustainability of the changes made. The project used social media and Internet tools (Twitter, Facebook, YouTube, SurveyMonkey, GoPetition, GoMeeting, etc.) in several ways: to engage the community of practitioners in public consultation to identify what were their concerns; in awareness raising, e.g. there was a competition to submit a short video what a career in science was about; in community building and sharing of experiences and knowledge; in dissemination of outputs; in communicating new developments; in holding consortium meetings.

Orientation towards societal challenges

- Health, demographic change and wellbeing
- Food security, sustainable agriculture and forestry, marine and maritime and inland water research, and the Bioeconomy
- Secure, clean and efficient energy
- Smart, green and integrated transport
- Climate action, environment, resource efficiency and raw materials
- Europe in a changing world – inclusive, innovative and reflective societies
- Secure societies – protecting freedom and security of Europe and its citizens

GenSET raised awareness of the importance of gender as a condition of research and innovation quality, its content, process and outcomes. It showed that because women were historically excluded from research as researchers, subjects of research and targets for research, science had more evidence for men than for women and this meant that the outcomes were often poorer for women than for men. Furthermore, the research evidence gathered for the Consensus Seminars showed that gender is an important dimension of research content not only in health but also in transport, energy, climate change, etc. In short, gender was an important variable for investigation that the 'gender neutral science' paradigm ignored.

Furthermore, genSET promoted the view that sex, gender, and environment have to be considered in research both singly and in interaction with one another. Climate change for example is not only about women's voices in the policy debate but also about human behaviour feedback in climate change models and about biological and social differences in how women and men adapt to climate change because of the differences in their physiology and lives. For example, in developing world women spend great part of their lives collecting fuel, and are forced to use cooking stoves that are very polluting, which affects their health and the health of their children.

Photo Pixabay

Similar initiatives
- The Gender in Science and Technology LAB – GENIS LAB, 2011-2014 (www.genislab-fp7.eu/)

The creation and composition of Law No. 69/07 of the Tuscany Region

Law no. 69/07 of the Tuscany Region aims at pro-actively promoting citizen involvement in decision-making processes. The innovative character of the law lies not only in its content, but also in its formulation process. The process of creating law no. 69 started in 2006 when a large number of local authorities, professionals, members of grassroots groups, associations and interest groups, as well as academics and ordinary citizens across Tuscany contributed significantly to defining the goals, contents and features of the Law itself. Law No. 69 provides an innovative case example of how the normative principles of deliberative democracy can be transposed into a legislative framework.

Context

Law no. 69 was passed in December 2007 by the Tuscany Region after a protracted two-year process. Claudio Martini, the President of the Region at the time, had originally proposed the idea of legislation to enhance citizen involvement in his 2005 election campaign. In proposing the Law on participation, he was aware of the erosion of traditional forms of civic participation in a Region traditionally rich of 'social capital', as well as of the growing mistrust of its citizens towards political parties and institutions, as shown by the declining voter turnout rates. Martini was supported by advocacy groups such as the association *Rete Nuovo Municipio* (the 'Network for a new municipality'), which is committed to citizen participation in local government. He was joined by the *Assessore* (Minister) responsible for local government and institutional reform, Agostino Fragai. Martini and Fragai's political influence ensured the successful approval of the Law. However, many members of the Regional Government and Assembly, in-

Background information

Name: Law no. 69/07 of the Tuscany Region (Italy) defining 'Rules on the Promotion of Participation in the Formulation of Regional and Local Policies'

Organizer: Tuscany Region; independent Regional Participation Authority

When: October 2008 (when actual implementation begun; the Laws was passed in December 2007) – March 2013

Where: Tuscany (Italy)

Who: Rudolf Lewanski, Tuscany Region; independent Regional Participation Authority

Additional information:
http://www.itas.kit.edu/english/iut_completed_deck11_buedizut.php

Initiative characteristics

PE category: Public Deliberation

Mechanism: 21st Century Town Meeting

Main purpose of initiative: Dialogue/deliberation, (co-governance)

Geographical scale: Regional

Organizing entity: Regional governmental body

Target groups: Lay publics, stakeholder organisations, experts, public officials

H2020 Societal Grand Challenge(s):
• Europe in a changing world – inclusive, innovative and reflective societies

cluding members of the same majority party (*Partito Democratico*, previously the Italian Communist Party or PCI) remained skeptical. There were lingering doubts about the efficacy of public participation coupled with the belief that representatives were after all elected to take responsibility for making decisions.

The innovative character of the Law lies not only in its specific content, but also in its original formulation process in which, starting January 2006, a large number of local authorities, professionals, members of grassroots groups, associations and interest groups, as well as academics and ordinary citizens across Tuscany contributed significantly to defining the goals, contents and features of the Law itself. It was an original route, later defined as 'an interesting case of meta-participation, i.e. of citizens deciding how citizens should participate'. In fact, some one thousand individuals are estimated to have, in various occasions, contributed to the legislative text as it was being drafted, thus allowing it to be influenced by the manifold participation experiences that were taking or had taken place throughout the region and elsewhere. The discussion was framed by considerations around theories of deliberative democracy and influenced by foreign experiences such as Brazilian participatory budgeting, the French *débat public,* British models of participatory planning and deliberative experiences with randomly selected citizens.

The Region concluded this phase by putting theory into practice, i.e. using a deliberative method to discuss and decide the contents of the bill itself by means of a large-scale 21st Century Town Meeting that took place in Carrara in November 2006. The event was more than a perfunctory exercise of public engagement as the Region's President in front of the 408 participants explicitly committed to participants' recommendations being included in the Law. Since participants requested to continue to monitor subsequent development of the bill, a delegate from each of the 48 tables in the TM was elected by the participants to advocate their views, to maintain links with the Regional Administration and to feedback developments to the other participants. Noticeably, there was systematic reflection at each stage of the process; all the documents of the process pertaining to the bill were 'made available to participants … for discussion and assessment' on

morgueFile free photo

the participation section of the Region's website, creating new 'opportunities for reflecting on the critical events and aspects of the deliberative process'. In the end the process linked participatory democracy with the mechanisms of representative democracy, as the Law was passed by the Regional Assembly on December 19 with broad support (it obtained the votes of the center-left majority, whereas the majority of the center-right opposition abstained; only one councillor of the right voted against).

Aims and mechanisms

The legal provision institutionalizes citizen participation decision-making about issues of public interest, and does so by enhancing features explicitly derived from deliberative theory.

Law no. 69/07 aims at pro-actively promoting citizen involvement 'as an ordinary form of administration and government … in all sectors and at all levels' (article 3.1 b; it asserts its legitimacy in this by referring directly to the Regional Statute articles 3 and 72). More specifically it aims (article 1) at renewing democracy and its institutions by integrating it with practices, processes and instruments of participatory democracy, increasing and re-generating social capital and cohesion' empowering citizens to contribute to public policy formation (participating in local and regional policy making is declared to constitute a right of Tuscan citizens), improving the relationships between the Government and society, giving voice to powerless interests.

Law no. 69 aims at promoting citizen participation in the 'formulation of local and regional policies' (article 1.1).

The Law introduces two distinct types of participatory processes, one concerning large infrastructure projects having a significant environmental or social impact on a regional scale, the other enhancing citizen engagement in relation to local policies, decisions and issues.

In the first type of process, the Region aims at dealing pro-actively with the siting of projects that typically give rise to conflict, spawning angry ad-hoc citizen committees. The Law responds to this problem by introducing (articles 7–10) a process somewhat along the lines of the French *débat public*. In order to avoid the DAD syndrome ("Decide, Announce, Defend") at the start of the project when options are still open, proponents, local authorities or citizens (at least 0.5% of all Tuscans above the age of 16) can ask the Regional Participation Authority to set up a public debate. The Law does not specify the minimum financial or physical thresholds for the projects that are the object of such processes, leaving a large discretion to the Authority, who must decide on the actual relevance of the project. Once the process is complete (normally lasting six months, except when there are grounds for an extension), the person in charge of the process (nominated by the Authority) publishes a report on the process and its outcomes. The public

debate does not entail any obligation for the proponent who, within three months of the publication of the report, faces three options:
a) cancel the project entirely or present an alternative;
b) modify the project, detailing how this will be done; or
c) pursue the initial project, justifying the reasons for this choice. In any case, the Region in defining its programs for the construction of public infrastructure, gives priority to those projects that have undergone such a process. Since the Law's approval, no request to carry out a public debate about infrastructure development has been forwarded to the Regional Authority; thus, none have actually been carried out.

The second type of process aims at promoting participation at the local level; requests for Regional support are open to four categories of proponents:
a) local authorities;
b) residents above the age of 16 (both Italian citizens and foreigners residing permanently within the affected area); in such cases signatures of a percentage of the population (from 0.5 to 5%, depending on size) are required;
c) schools;
d) firms, in the case of new projects having relevant social, economic or environmental impact.

To the proponents, Law no. 69/07 offers various forms of support: financial, methodological and logistical (such as the possibility of using the website and technology of the Region). The Law is more than just symbolic, as it has allocated 700,000 euro per year to support such processes. The relevance of this provision cannot be overestimated since sources such as foundations and donations for funding participatory processes are less accessible in Italy as compared to other Western countries; funding by the public sector is essential if 'high quality' participation is to be attained.

To ensure neutrality, essential for the credibility of participation processes in the eyes of both participants and society at large, the implementation of the Law has been entrusted to an *ad hoc* independent Authority, modelled on the French CNDP. However the Authority in Tuscany is a 'monocratic' body, i.e. both an individual and an entity, rather than a com-

mission as with the CNDP. The Authority is appointed by the Regional Assembly according to a complex nomination procedure aimed at reaching a bi-partisan agreement. Candidates for the position must be experts in the field of political science or public law, or have established experience in the field. Thus, the prevailing criterion is professional competence rather than political affiliation. This is a relevant difference as compared to the model adopted by other European Regions (such as Puglia and Catalunya) that govern public participation through offices within the regional governments, thus depending on the political majority of the moment.

The Authority is entrusted with a number of tasks, the main being assessing and deciding on funding of participatory processes and offering methodological advice to the proponents.

Results

In the period 2008–2012 the Authority received and evaluated 220 requests of regional support to participatory processes; 116 were funded, for a total cost of approximately 3.6 million euro. The average financial contribution by the Region to each project thus amounted to approximately 31,500 euro.

It emerges quite clearly that local administrations (and especially municipalities) were the main beneficiaries of the Law (approximately 78.4% of the total). However the Law has enabled also other actors, such as schools (14 processes funded) and ordinary citizens (11 processes funded), to promote and carry out participatory processes.

Though the impression is that in many cases the processes have in fact exerted influence on decisions and contributed to the overall goals of the Law, hard empirical evidence of the actual impacts of the individual processes and of the overall policy is still lacking (both because sufficient time in most cases has not yet elapsed since the conclusion of the processes, and because of a lack of resources to systematically monitor and analyze the efficacy and outcomes of the processes). Yet the sheer number of processes ignited thanks to the Law and the variety of topics addressed by them *per se* appears to be significant.

As far as evaluation is concerned, the Authority – basically a 'one man show'– lacked the resources to monitor and evaluate single processes. However a public report was produced annually.

Advantages

Law no. 69/07 is probably the first instance in which the normative principles of deliberative democracy have been transposed into a legislative framework, the principal features being a structured context favouring:

- Dialogue and deliberation: deliberative 'methods', tailored according to the specific aims of each process and to the context in which processes take place (article 15.1 d), were systematically employed.
- Neutrality: the 'management of the process was entrusted to a neutral and impartial actor' (i.e. a facilitator) (article 15.1 e) and other ad hoc mechanisms (such as 'guarantee committees') were put into place.
- Balanced information: specific actions were undertaken to ensure maximum dissemination among all citizens of information, even technical, before, during and after the process (article 15.1 h) and local authorities ensured access (also using information technologies) to all relevant information (also in non-technical language) on the topic as well as on the process itself (articles 15.4 c, 16.2 f and d).
- Inclusion: special attention was 'given to those conditions capable of ensuring equal possibilities of expressing all points of view' and the involvement of the 'weak and disadvantaged' (including physically disabled) individuals (article 16.1 a) as well as persons from 'diverse social and cultural groups' (article 15.1 g); furthermore, special attention was given to practical conditions (choice of timing and location) entailing a balanced gender presence (article 15.1 f).
- Influence: Law no. 69 does not impose necessarily the adoption of participatory processes in local policy decision-making. The Law's strategy is to seek the voluntary cooperation of local administrations that are keen to activate citizen engagement offering them financial incentives and methodological support. Regional support however is subordinated to an exchange, by which the Region requests local authorities to sign an inter-institutional *entente* agreement (artt. 15.4 a and 18) in which local authorities voluntarily accept the principles of the Law and its procedures not just in the specific funded process, but also to use public participation regularly in their decision-making processes. Thus, to gain access to funding local authorities are required to declare officially that

they will take into serious consideration the results of the participation process. Should they deem the outcomes less than acceptable (for example, opposing community interests or their electoral mandate), they can override the outcomes only on the condition that they publicly provide the reasons for their deferral. In this way, the autonomy of local administrations is fully respected. They are free to decide whether or not to sign the agreement with the Region, and the responsibility of the final decision remains in the hands of the competent administration.

Furthermore, the Authority enhanced such traits by steering process design to ensure the dialogic-deliberative quality of the processes.

Obstacles

The attitude of the Tuscany Region was somewhat contradictory and paradoxical: on one hand it passed a very innovative provision, and funded it substantially throughout its duration. Furthermore, it handed over the task of actually managing the Law to a professional actor, independent from the political system.

On the other hand, the Regional political system (regardless of political orientation), after passing the Law, by and large ignored it, and in some occasions even opposed specific processes and their outcome. In at least one occasion (siting of a small toxic waste incinerator) an open conflict by the independent Authority – upholding that the position expressed by the citizens and accepted by the local Administration – and the Regional Executive ('Giunta') broke out. Furthermore, the Authority was understaffed, lacking the human resources required to carry out all the tasks attributed by the Law.

Innovative dimensions

Tuscany has gone further than other regional and local governments active in this field by means of an ambitious and innovative public policy proactively promoting citizen engagement in decision-making processes, focused both on production of social capital and civic-mindedness, as well as managing conflicts. Law no.69/07 creates a new structure of opportuni-

ties, and calls institutional and social actors to commit to the quest for new participative practices. In doing so, Law no. 69/07 clearly moved beyond superficial consultation and pursues quality standards inspired by deliberative democracy theory. In this respect Tuscany can be seen as a 'laboratory' where deliberative approaches were tested in a variety of contexts and issues (see 5 above).

Orientation towards societal challenges

- Health, demographic change and wellbeing
- Food security, sustainable agriculture and forestry, marine and maritime and inland water research, and the Bioeconomy
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- Europe in a changing world – inclusive, innovative and reflective societies
- Secure societies – protecting freedom and security of Europe and its citizens

The processes promoted by Law no. 69/07 cover a broad spread of topics ranging from urban renewal projects, land planning to participatory budgeting, from education (processes carried out in schools) to social, economic and environmental policies. Contrary to initial expectations, processes concerning infrastructure siting decisions were not numerous (10 requests, 5 funded).

Similar initiatives
- Constitutional Council in Iceland, 2011 (http://participedia.net/en/cases/icelandic-constitutional-council-2011)
- See the plan for Empowering Citizen Voices in the Planning for Rebuilding New Orleans, 2006 and Imagine Jersey 2035 in this catalogue

ACE – Act Create Experience

The ACE-project was the WWF-UK youth response to the Earth Summit's Global Plan for the environment. ACE involved young people, teachers, community artists and youth workers with support from politicians, local government officers, voluntary organisations and local communities in an educational, empowering and democratic participation process, which among others objectives aimed to raise awareness of the issues of sustainability and conservation of planet Earth. The project was a grass root initiative led primarily by young people and they played a central role in informing the County Chief Executive Department's development of Agenda 21.

Context

ACE (Act, Create, Experience) was the WWF-UK youth response to the Earth Summit's Global Plan for the environment. Young people from London, South Wales and North Yorkshire created their own critical framework of environmental elements: Pollution, deforestation, ozone depletion, genetically engineered food, quality of life, and the balance between good economy and environmental conscience were issues which stimulated young people to think expansively about their world, and take a more creative and participatory stance in shaping their futures.

ACE involved young people, teachers, community artists and youth workers with support from politicians, local government officers, voluntary organisations and local communities.

An illustration of ACE is Northallerton College in North Yorkshire. Terry Begley, Head of Community Education at the College led the project on behalf of the College. The project was co– funded by WWF-UK and North Yorkshire County Council through its delegated budget to the college.

Background information

Name: ACE – Act Create Experience

Organizer: WWF-UK

When: 1996 – Ongoing

Where: UK, Wales and North Yorkshire

Who: Dr Jane Randall, Envirovision

Additional information: www.envirovision.org

Initiative characteristics

PE category: Public Deliberation

Mechanism: ACE (act, create, experience)

Main purpose of initiative: Awareness raising, education and capacity building, dialogue/deliberation

Geographical scale: National

Organizing entity: NGO

Target groups: Lay public, public officials, young people

H2020 Societal Grand Challenge(s): All seven

The principal rationale was that youth arts were seen as the most powerful medium for expressing the young people's concerns about the issues to be explored. The initiative required total voluntary participation by young people in their own time and outside of the college curriculum.

In Wales ACE was embraced by Risca Comprehensive School. Principal, Pat Millichamp, staff and students provided a curriculum framework:

"the partnership with WWF ACE supports our commitment to provide our pupils with an education that goes beyond the National Curriculum and develops young people with open, inquiring minds and a way of solving problems that is creative and reflective"

Aims and mechanisms

The aims are to create opportunities for young people to:
- develop critical, flexible and creative thinking on environmental issues that are simultaneously global and local in scope,
- explore, develop and use digital media and creative multimedia skills in communicating environmental knowledge, understanding and action,
- encounter new experiences that challenge, stretch and stimulate,
- participate in decision-making processes.

For Northallerton College the primary aim was to ensure that the young people participated in an educational, empowering and democratic process, which would raise awareness of the issues of sustainability and conservation. In addition, it aimed to produce an ongoing legacy that would allow future generations of students to continue to offer their voices and views to policy-makers at a school, local authority and national level. Young people actively participated in the process at a financial and development level through group discussion and decision-making. In essence, the direction of the project was totally in the young people's hands. A challenge for both them and the sponsors/leaders.

At Northallerton College participants were recruited at the college via a poster campaign. Young people themselves designed the identity and name of the initiative through existing youth engagement groups. They decided to call the project POWERHOUSE. It was recognized at the outset that in order to raise awareness of the project the wider community was to be actively involved and informed. Local press and media were used, as were the college's PR processes. Key staff was recruited to facilitate each of the arts mediums of Drama, Dance, Visual Arts, Music, and Technology. A co-ordinator was also appointed, as were community artists. One of the key challenges, particularly of college teachers involved was accepting the degree of

ownership and control the young people had over the process, as this was not their usual modus operandi. A greater culture of trust was required for the project to succeed in its aims. This was eventually accepted by all adults involved, and actually had a positive effect on their future approach to the educational process and their practice, which was an unforeseen but beneficial outcome.

The London group based in Waltham Forest started in Walthamstow Girls School. Head of Art, Val Hill was the catalyst in this ACE initiative. The young people along with the Youth Service and Jane Randall on behalf of WWF-UK organised an environmental conference: 'The Future of the Planet is in Young People's Hands'. Young people's views were put over in an expressive, entertaining and powerful way through drama, dance, music, art and multimedia, including an internet video conference with youth in the USA. Young people, teachers, youth workers politicians and the local community were members of a very participatory audience.

The original group inspired younger students who in turn organised events for all young people in Waltham Forest – including roadshows to other secondary schools. Members of the group organised and hosted the London part of a Department for International Development Anglo-Russian environmental visit. They also took responsibility for a meeting with international students who were here on DFID sponsored visits.

In Wales over 300 young people, parents, voluntary groups and mayors from local towns attended the first conference which aimed to allow young people's views to be heard by influential adults in the community. Workshops included biodiversity, river projects and cycling to relaxation, aromatherapy and line dancing. The premise being that you have to look after yourself to be able to look after the planet.

The school embarked on an "Alternatives Day". All pupils completed individual evaluations. All participants expressed a sense of pride in the event and the impact on the local community. "...at one point we had parents, pupils, governors, local residents and our MP (Member of Parliament) all learning how to juggle". Further: "... Robert, one pupil who very often fails within the 'normal curriculum' went home smiling – in his recycled outfit, with wet hair from scuba diving, clutching his hand-thrown pot and gargoyle, knowing he had learnt to juggle!"

WWF-UK provided seed money for the ACE initiatives. Staff and capital equipment were funded from the College Community Education budget in North Yorkshire, from the schools' budget in Risca (Wales) and from Waltham Forest Council and their Youth Service in London.

Results

Through the ACE approach, young people built a repertoire of understandings, images, examples and actions. Each new experience of reflection-in-action enriched their repertoire. By using an action learning approach the ACE groups took time before, during and after activities to ask themselves what went well, what didn't go so well, and how to build on their successes.

In Waltham Forest six members of the original group wrote the Council's policy on Youth and Agenda 21. They scripted and presented a highly original sketch on genetically engineered food, which they performed at a Local Agenda 21 day conference to Councillors, Officers, government officials and members of the community; the Leader of the Council is on record as saying that it is the most informative, fantastic thing that he has ever seen on the environment. The ACE group were especially invited to present their achievements and ideas for the New Millennium Launch in Westminster. The audience included Members of Parliament, youth organisations, Local Authority Education Departments, the BBC and religious leaders. The group planned, scripted, and presented their ideas using multimedia, drawing on their studies and experience. The organiser wrote: "….the impact of your presentation was huge".

Northallerton College students played a central role in informing the County Chief Executive Department's development of Agenda 21. Important outcomes have followed including a survey of the recycling policies and practices of local retailers and the formation of the Environmental Action Group Agenda 21 (EAGA) which spoke for the young people of the town on the Local Agenda 21 group. The project also secured a grant of £24,000 from Yorventure to purchase computers and dedicate a classroom as a base for the project. A curriculum framework was developed as a tool for planning, recording and reviewing.

Risca pupils presented a report to the Local Agenda 21 Sub-Committee. The Chief Executive of the Council asked that the pupils send him details of their ideas. They also engaged in debates with council officers on environmental issues.

Pupils from Settle High School and Community College spent several weekends working with their teacher examining the language used in international protocols and producing a "jargon busters list". They also researched Agenda 21 issues in the curriculum

An important outcome is the impact of the experiences on individuals. Samantha Kenny's poetry presented on BBC radio featuring Powerhouse demonstrates the personal impact ACE had:

"I began Powerhouse in conjunction with Project 21 because it was based on the environment. I knew nothing more than it was to run for 10 weeks and it involved the community, so, I really didn't know what to expect. Powerhouse began as another 'out of college hours' activity and escalated to a thought provoking, emotional duty..."

Advantages

Achievement, creativity, compassion, synergy, participation, equality and inclusiveness are values central to ACE. It is an approach to working with young people with the aim to raise awareness of the interrelationship between the natural and human world. The key elements are: Time, Space and Action. The premise is that the most effective way to involve young people is to start from their own enthusiasm rather than established practice. This is why the ACE model is eminently transferable.

From the very first conference the young people have reached out to each other and across the world – via the internet and social media as well as hosting and planning environmental focused visits for international visitors. ACE young people have run innovative, thought-provoking workshops at an international sustainability conference and have presented themselves at the Brazilian Embassy and the Russian Embassy.

In North Yorkshire prior to undertaking the initiative, awareness among young people in regard to issues of environmental sustainability were limited to a few activists. One of the main advantages was that, subsequent to WWF's ACE initiative, young people could no longer claim ignorance. The use of youth arts as a medium gave young people their voice to express their

views as they felt them. It was not a top down government initiative, it was a grass roots initiative led by young people that continues to this day. Students at Northallerton College are still active in environmental projects. Additionally, the Countywide 'Connecting Youth Culture" youth arts projects sprang out of POWERHOUSE, and are a continuing legacy of ACE, and what it ensured by providing young people with a voice.

Each ACE group built relationships with local media and activities were reported widely both on BBC radio and local media.

"Just a note to say how brilliant/wonderful last night's Penguin Café production by 'Powerhouse' was. The whole event was full of important messages and reached young people and the audience in a way no WWF slide presentation or campaign talk ever could" WWF-UK Regional Representative.

Obstacles

ACE is defined by the commitment of a group of dedicated adults who were confident and prepared to hand responsibility to young people. Their attitude was that of enabling and facilitating young people to broaden their horizons, take risks and seek innovative solutions.

North Yorkshire reported that somewhat surprisingly, the initiative incurred support from almost everyone involved or consulted from the outset. The major obstacle was the timescale, which some felt was incredulous. The main challenge was to complete the project in 10 weeks, and culminate in a public performance for the local community. However it was felt essential by the managers of the project to set a challenging (micro) time frame, if anything, as a reminder of the substantial (macro) time pressure that we all face in relation to sustainability and conservation. The initiative met this target. Senior local government officers, community leaders and politicians, as well as the Colleges governors all gave their support, and were delighted with the outcome.

So to the critics who ask "why focus on youth?" the answer is that the idealism of youth embodies the certainty that everything is ahead of you with the confidence that you can achieve. Such optimism should be celebrated, and not submerged by the tide of cynicism and gloom that often engulfs their elders. Adults must reflect on the world that they have known

and shaped and allow young people to have some control over their lives for a future reality that they will be a part of.

Innovative dimensions

The ACE approach is not a bundle of isolated elements: actors, events, environment, ideas and projects. It is a vibrant energy where all these elements have been fused. It is experiential, a learning process involving creativity and innovation with the acquisition of skills and knowledge.

Terry Begley (North Yorkshire) reminds the reader that we must bear in mind the first project was undertaken during the infancy of the World Wide Web, and before any forms of social media had been developed. The technological development utilized by a project such as this was cutting edge at the time. The use of synchronized video with a number of the arts media, such as dance, drama, and the visual arts, and the innovative use of digital technology enhanced the visual effects of the messages being conveyed. This was eye opening to the young participants and adults alike. As a direct result, the College invested in digital projectors as teaching tools, and subsequently became one of the UK's first Technology Colleges.

Multimedia has been central to ACE. It has led to presentations that are informative and exciting to watch and educational to put together. In our information-rich world, emphasis can no longer be on storing and regurgitating facts and information. Therefore young people need to develop the ability to understand and assimilate complex material.

Young people learn together via the globalized media and computer networks how to influence and create an awareness of their desires and expectations. They have the ability to spell out in bright colours what some adults would have swathed in ambiguity. For young people ACE brings into a single frame of reference a constellation of environmental experiences. It provides a crystallizing experience that stimulates interest, increases understanding and raises awareness of the linkages between environmental, social and economic issues. Most importantly, it values young people.

'A further good point concerning the Agenda 21 Conference was that it made people think. There was none of the usual 'We're running out of coal so we can

save energy by switching lights off,' while the audience sat back and let all the information go in one ear and out of the other! We were made to think, to use the information we had gathered. We were made to offer solutions by telling ourselves, 'There's this, this and this wrong with the way we are living. What are we going to do about it and how are we going to do it?' So for once, in contrast to the usual scenarios, there were few empty promises about doing more recycling and putting food out for the birds, and more positive statements and experiences that gave us the opportunity to make the connections and left a lasting impression.'

Katy Broadhurst, Risca, South Wales

Orientation towards societal challenges

- Health, demographic change and wellbeing
- Food security, sustainable agriculture and forestry, marine and maritime and inland water research, and the Bioeconomy
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The future is now, and in a world that appears to be constantly new and endlessly shifting, young people need to be curious, creative, critical and flexible. There are an increasing number of challenges that are ambiguous and unfamiliar requiring high level thinking and problem-solving skills. This will invoke the use of imagination and intuition as well as logic and facts. With increased knowledge and greater insight we must not forget to ask "what if...?" That is why the ACE approach is relevant to each of the societal challenges under Horizon 2020. The form and shape of young people's responses are determined by them as individuals and groups.

The challenges of 2020 will be faced by teenagers and young adults who are in the process of acquiring information, experience, argument and analy-

sis, knowledge, skills and technological savvy. Young people bring informality, energy, agility and a fresh perspective. Their responses to environmental issues can be quirky, amusing and powerful. Young people are highly motivated when they are involved and respected. Cultural writers have pointed to the importance of teen and early adult years because it is here "...where they form symbolic moulds through which they understand themselves and their possibilities for the rest of their lives..." (Willis 1996a: 7)

Planet Earth will benefit greatly if their environmental horizons are broadened.

Similar initiatives
- Citizen jury with young people on designer babies, UK, 2004 (http://genomics.research.southwales.ac.uk/projects/citizensjury/)
- See the 2WAYS project and Youth Council Espoo in in this catalogue

morgueFile free photo

The National DNA Database on Trial

The National DNA Database on Trial engaged young people with the ethical and social issues surrounding the National DNA Database. Through a Mock Trial model, the aims of the project were to promote education, awareness raising and public participation in policy making. The project successfully reached those aims, and demonstrated that young people can understand complex genetic topics, and can be encouraged to make decisions about the applications of DNA technology after consideration of the surrounding ethical, social, and legal issues. Among other outcomes, the project has helped facilitate the input of young people to the policy process, as evidenced by their presentation to the Human Genetics Commission.

Context

The background to this project is the forensic use of genetic information by criminal justice agencies, specifically the National DNA Database. The Human Genetics Commission (HGC) in the UK had recently launched a Citizens' Inquiry into the forensic use of DNA and was going to report to the government on this issue.

The project was funded by The Wellcome Trust and put the National DNA Database on Trial in Cardiff Crown Court. Before the Trial we ran focus groups (n=10) with 84 young people around South Wales in youth centres and youth offending teams in order to explore some of the social and ethical issues surrounding the National DNA Database and to recruit interested participants to the Trial. All participants (n=37) at the Trial (jury, prosecution and defence) were aged 15–19, some of whom had direct experience of having their DNA taken. The Trial was open to the public and the audience (n=56) voted on the key issues using hand-held electronic voting devices.

Background information

Name: The National DNA Database on Trial – Avoiding the Usual Suspects

Organizer: University of South Wales

When: June 2008 – February 2009

Where: Cardiff, Wales.

Who: Dr Rachel Iredale, Genomics Policy Unit, Faculty of Life Sciences, University of South Wales

Additional information:
http://collectivememory.britishscienceassociation.org/memory/national-dna-database-on-trial/

Initiative characteristics

PE category: Public Deliberation

Mechanism: Mock trials

Main purpose of initiative: Awareness raising, education and capacity building, dialogue/deliberation

Geographical scale: National

Organizing entity: Academic institution

Target groups: Lay publics, young people, public officials

H2020 Societal Grand Challenge(s):
- Health, demographic change and wellbeing;
- Secure societies – protecting freedom and security of Europe and its citizens

Aims and mechanisms

The aims of the project were education, awareness raising and public participation in policy making. We wanted to allow some young people in South Wales to:

- Engage with a complex bioscience issue (genetics) over an extended period of time,
- Think about the NDNAD in ways they may not have previously done,
- Acquire an understanding about the issues that make personal sense to them and which is located within their own particular environment and community
- Be the co-producers of rich qualitative data that reflects their thoughts on the NDNAD,
- Emerge as confident experts about the NDNAD
- Disseminate their verdict to policy makers.

The mechanisms used in the project included:

- Engaging young people aged 16–19 whose details are already on the NDNAD in a series of focus groups that discussed the forensic use of DNA and involved them in thinking about and debating some of the ethical, legal and social issues, which surround the NDNAD,
- Recruiting and retaining a sufficient number of these young people to act as jurors and witnesses in a Trial of the NDNAD,
- Conducting a Trial at which the issues surrounding the NDNAD are addressed in a fair and honest manner and at which some of the young people played the roles that would normally be taken by experts in criminal justice proceedings,
- Generating sufficient interest in the Trial, particularly in the local community, so that there was an audience observing the proceedings,
- Disseminating the findings of the project as widely as possible, including producing a webpage providing information about the NDNAD, the Trial, the verdict, and links to other relevant sites.

Overall, this project was extremely successful in terms of engaging young people with the ethical and social issues surrounding the National DNA Database.

We demonstrated that the young people who participated in the Trial in Cardiff Crown Court in November 2008 can understand complex, contentious genetic topics, and can be encouraged to make decisions about the applications of DNA technology after careful consideration of the surrounding ethical, social, and legal issues. The research undertaken before the Trial in order for the prosecution and defence teams to present their arguments was impressive. We also found that the majority of participants felt comfortable discussing these issues with their peers and with adults and they were extremely enthusiastic and self-assured. In addition, after the Trial, these young people were sufficiently informed and confident to discuss their views with decision makers, such as representatives of the Welsh Assembly Government and the Human Genetics Commission. Importantly, this project has helped facilitate the input of young people aged 16–19 to the policy process, as evidenced by their presentation to the Human Genetics Commission in December 2008 as part of the Commission's evidence gathering mission for their report to government on the National DNA Data-base.

The Principal Investigator was Rachel Iredale, Reader in Public Engagement at the University of South Wales collaborationg with the Wales Gene Park, Techniquest and Swansea University.

Results

This project engaged young people with the ethical, legal and social issues surrounding the National DNA Database, including initially young people from hard-to-reach populations, such as young offenders. We obtained rich qualitative data on the perspectives of the National DNA Database from young people who have had direct experience of having their DNA included on the National DNA Database. We also have a better understanding of the issues that are important to young people in relation to genetics and the criminal justice system and how these issues relate to their everyday lives.

We discovered that the Mock Trial model can successfully engage young people and adults with genetics issues, and was an enjoyable experience for both audiences. Although an expert panel was available to answer questions at the Trial, the audience heard from informed young people as opposed to 'experts', and this broke down some of the barriers associated with conventional public debates.

Whilst we failed to engage with young offenders for the duration of the project, those who participated in focus groups before the Trial, informed us that they had benefited hugely. The sessions that we conducted in Parc Prison were also rated highly, and when we returned to award certifcates to those who had produced the artwork, we were informed of real enthusiam for the project.

It was apparent throughout the project that the quality of the evidence presented, and the discussions amongst the young people generally, were superb, and demonstrated real understanding and interest; this was sustained after the project as illustrated by many of the participants attending the "*From Cheek to Court*" screening in September 2009, more than 9 months after the Trial.

The project has produced the following outputs:
- A project report of the Trial – Iredale R, Anderson C, Shaw A. (2009) The National DNA Database on Trial: Project Report. Pontypridd: University of Glamorgan. ISBN: 978-1-84054-220-2
- A variety of material about the National DNA Database that is easily accessible to the public through the website, including edited video footage of the Trial (www.dnadatabaseontrial.org)
- A short film called 'From Cheek to Court' describing the journey of DNA through the criminal justice system
- A 7ft tall model of the DNA Database made by prisoners from a local prison
- A 20ft long banner with the words DNA Database and handprints of young offenders from the local prison.

Advantages

The success of the project can be discussed in relation to its three aims: 1) recruiting of young offenders, 2) engaging participants with issues surrounding the NDNAD and finding out their views, and 3) facilitating participants' discussions with decision makers.

Recruiting young offenders: The project team had considerable support from staff at youth offending centres, attendance centres and probation centres, who encouraged their young people to continue with the project. However, we found that young offenders were reluctant to participate in the Trial because they found it difficult to commit to the project because of the time required.

The views of participants about the NDNAD: The jury's verdict was similar to deliberations of the HGC's Citizens' Inquiry panel which concluded that there should not be a whole-population database. Similarly, the Citizens' Inquiry panel decided that it would cost a great deal to collect every person's DNA; that most people do not commit crimes to justify a whole-population database; there were concerns surrounding access and security of information on the database; there were concerns that an individual would have given up their rights to control who has their DNA; and that it goes against a principle of the British justice system: 'innocent until proven guilty'. It was interesting therefore to find that during the project, strong support for a UDNAD appeared only during the focus groups (in which most participants had a DNA profile on the NDNAD).

Participants' discussions with decision makers: At the end of the project, the young people were sufficiently confident to discuss their views with others, including their peers and decision makers, such as members of the Welsh Assembly Government and the HGC. These positive impacts reflect those found in other participation models. We believe that the confidence and depth of knowledge displayed by the young people emphasized a message previously stated by others – that young people are capable of understanding complex issues like genetics and can therefore produce well-reasoned opinions, which should be considered by policy makers.

Obstacles

We failed to engage with young offenders for the duration of the project. Most young people from the youth offending teams and attendance centres did not sign up to participate in the Trial. Some of the reasons for not wanting to continue included:

- not having any objections to their DNA or DNA from others being held on the NDNAD and seeing no point in debating the current organisation of the NDNAD
- being daunted by the level of commitment that might be required of them if they took part in the project
- not wishing to speak in front of a large public audience
- being unsure about committing to a project that seemed too far in the future for them
- having already had negative experiences in Cardiff Crown Court which influenced their decision not to take any further part in the project.

We were unable to overcome these problems with young offenders during the lifetime of this project.

Participant evaluations of the Trial were positive. Their favourite parts of the project were "Working as a team and finding out information about the DNA Database"; "Gathering the information because it shed light on arguments I knew little about previously"; "Working with other people and learning about DNA Database".

All participants were given a £50 cheque to thank them for their participation. When asked whether they thought the amount of money was enough, 17 participants said they would have taken part in the project without receiving any money at all.

When participants were asked whether they thought their knowledge about the NDNAD had increased, 34 young people said that it had increased a lot, with three saying it had increased a little; no-one said it had not increased.

In relation to delivery and dissemination we found that having a dedicated website is crucial.

Innovative dimensions

This project engaged young people with the ethical, legal and social issues surrounding the National DNA Database, including initially young people from hard-to-reach populations, such as young offenders. We obtained rich qualitative data on the perspectives of the National DNA Database from young people who have had direct experience of having their DNA included on the National DNA Database. We also have a better understanding of the issues that are important to young people in relation to genetics and the criminal justice system and how these issues relate to their everyday lives. Importantly, this project has helped facilitate the input of young people aged 16–19 to the policy process, as evidenced by their presentation to the Human Genetics Commission in December 2008 as part of the Commission's evidence gathering mission for their report to government on the National DNA Database this year.

We demonstrated that the young people who participated in the Trial in Cardiff Crown Court in November 2008 can understand complex genetic topics, and can be encouraged to make decisions about the applications of DNA technology after consideration of the surrounding ethical, social, and legal issues.

The research undertaken before the Trial in order for the prosecution and defence teams to present their arguments was impressive. We also found that the majority of participants felt comfortable discussing these issues with their peers and with adults and they were extremely enthusiastic and self-assured. In addition, after the Trial, these young people were sufficiently informed and confident to discuss their views with decision makers, such as representatives of the Welsh Assembly and the Human Genetics Commission.

We discovered that the Mock Trial model can successfully engage young people and adults with genetics issues, and was an enjoyable experience for both audiences.

Orientation towards societal challenges

- Health, demographic change and wellbeing
- Food security, sustainable agriculture and forestry, marine and maritime and inland water research, and the Bioeconomy
- Secure, clean and efficient energy
- Smart, green and integrated transport
- Climate action, environment, resource efficiency and raw materials
- Europe in a changing world – inclusive, innovative and reflective societies
- Secure societies – protecting freedom and security of Europe and its citizens
- Health & Secure Societies

Similar initiatives
- Citizen jury with young people on designer babies, UK, 2004 (http://genomics.research.southwales.ac.uk/projects/citizensjury/)
- Nano jury, UK, 2005 (Robert Evans and Alexandra Plows: Listening Without Prejudice? Re-Discovering the Value of the Disinterested Citizen (2006), p.18)

2WAYS

2WAYS was a two-year project that organised a series of science communication events on the life sciences, including the novel format of 'science parliaments'. The aims of the project was to increase the awareness and knowledge about European life science research and involve European citizens –especially youngsters – in an intensive two-way dialogue with science experts and other stakeholders. Approximately 1,800 young students participated in the Science Parliament with the major impact being a documented increase in interest in scientific issues after the project.

Context

Primary rationale to develop science events' activities with specific focus on 1) current research, in this case ongoing or recently finished European life science research projects, and 2) public participation (here particularly focusing on youth by developing "Young Europeans Science Parliament", and 3) to carry out an impact study including both the events and presentations developed in 1) and the parliaments engaging young students in 30 cities around Europe.

The project was organized by the European Science Events Association and a consortium with six of its core members, each with a particular expertise and experience from various types of events. More than 20 additional Eusea members in as many countries participated as third parties. Together the consortium beneficiaries and third parties developed presentations of 17 life science projects (two members in different countries worked together with scientists of the research project in question), and arranging "science parliaments" for about 60 students 18–19 years old.

Background information

Name: 2WAYS

Organizer: European Science Events Association, Eusea

When: January 2009 – December 2010

Where: Approx 30 European cities, coordinated from Eusea office in Vienna

Who: Jan Riise, Eusea

Additional information: http://www.eusea.info/Projects/2WAYS

Initiative characteristics

PE category: Public Deliberation

Mechanism: Science parliaments (Young European parliament)

Main purpose of initiative: Awareness raising, education and capacity building, dialogue/deliberation

Geographical scale: European

Organizing entity: Science event association

Target groups: Lay publics, experts, stakeholder groups

H2020 Societal Grand Challenge(s):

• Europe in a changing world – inclusive, innovative and reflective societies

Aims and mechanisms

The 2WAYS project had the following objectives:

- Increase the awareness and knowledge about current state-of-the-art European life science research
- Involve European citizens – and especially youngsters – in an intensive two-way communicating dialogue with science experts and other stakeholders achieved by "Science Parliaments" (in city halls, museums etc.). The sessions of these "Science Parliaments" will lead to a list of recommendations of actions within each participating country and in the Finals event also at the European level.
- Join science festival organisations and science museums/centres and other civil society organisations together for a science communication project to exchange experiences.
- Determine the impact of the various tools and formats (from experiments to science cafés, from performances to workshops with scientists) on the audience, by checking the grade of change of the visitors' opinions, and by voting mechanisms via the "Impact Comparison Study"

Engaging the public formed a fundamental part of the 2WAYS project, in planning and during the actual project. In fact, using the established structure of European science events, existing and recurring science festivals and other science communication events such as the Wissenschaftsommer in Germany, made it possible to reach larger audiences with reasonable resources allocated for marketing and information.

The use of existing structures and events also meant that organisers, facilitators, communicators and other stakeholders could be reached with limited efforts and resources, as Eusea members anyway meet on a regular basis, and the additional 2WAYS training, communication and information could be handled within that framework. The lion's share of project resources could be allocated to the development of presentations regarding the 17 Life Science research project selected.

The "presentations" that were developed (including games, plays, interactive exhibits etc) were scheduled to be presented in at least three places: at the two partners' respective events, and at the "final event" for all partners

towards the end of the project. Furthermore, all presentations were documented in a "cook book" in order to make the presentations available for adaptation by other events.

The actual selection of research projects was done through a call for proposals period, where Eusea members were asked to liaise with another member and a European research project, and to prepare a basic idea on what kind of presentation they would like to develop. A jury consisting of researchers in various countries evaluated the proposals and finally 17 proposals were selected.

The 2WAYS project was supported by a website where each of the 17 presentations and all partners had their own parts, with the objective to create engagement by publishing stories, photographs, practical details and videos. This was meant to be used both internally and externally. The results, however, were below the expected; a content driven online presence requires dedicated resources and people working specifically with that.

Results

The outcomes of the project were evaluated as a separate work package of the 2WAYS project, by prof Hannu Salmi at the University of Helsinki.

Participants in the Young Europeans Science Parliament, approximately 1,800 students in 30 cities, 16–19 years old, answered surveys before and after the parliament events. The major outcome was a documented increase in interest in scientific issues after the project.

Furthermore, visitors at the participating science communication events were asked to fill out a survey in connection to the actual presentation.

Hannu Salmi writes:

'Science events are no longer isolated hands-on workshops created by a couple of 'science freaks', but have become a part of a larger movement promoting public understanding of science. They are influenced by not only the scientific community, but also by the other groups of society and vice versa. They also have a certain effect for the future career choices of young people and students.'

Interestingly, the perception of a scientist as a person did change, sometimes quite a lot, after having participated in events with the actual researchers present. However, at the same time, this change in perception did not seem to influence the thinking concerning futures career opportunities.

Advantages

All three initiatives, the life science project presentations, the science parliaments and the impact study, were all important and ground-breaking, each in its own generalised way.

The 2WAYS project presentations were the first to approach actual, ongoing research in a systematic way, actually collaborating with the researchers on research projects as they happened. Of course much of the presentations had to be based on already established findings and results, but the methodology contributed to the communication of research as such, and thus to the "scientific literacy", as the evaluator prof Hannu Salmi also writes: "*the aim is not solely to produce more scientists and technologists; it is also to produce a new generation of citizens who are scientifically and technologically literate*".

The work on ongoing research was a significant step ahead from much of the content of science fairs and festivals, i.e. presentations, exhibits and shows which visualise established science and laws of nature.

The science parliaments part of the project was a first collective attempt to explore the "parliament" format for particular scientific issues, in this case ethical aspects of life sciences. It turned out to be a most appreciated format and has since then, 2010, been repeated once coordinated by Wissenschaft-im-Dialog in Germany, who actually also was responsible for the parliament work packaged in the 2WAYS project. A third series of parliaments is being discussed with European funders in 2014–2015.

Obstacles

The 2WAYS project was in general met with a positive interest and willingness to participate or assist from various stakeholders, although the concepts presented – the life science presentations and the parliaments – were quite new and without precedents.

Concerning the parliaments, the ideas and structure were reasonably easy to communicate and most often perceived as a favorable opportunity for schools, to participate. However, the time for "scouting", i.e. finding schools, teachers, classes, getting the attention, interest and engagement, and solving practical details should not be underestimated. At least one local parliament had to be postponed to a later date, due to practical and logistical challenges.

Regarding the life science presentations, the scene was quite another. In these cases, the primary challenge was to engage the actual research teams, in general local groups or labs involved in one or more European projects. The participation was built primarily built on personal engagement and contacts; there was not that much scientific background and data to support any more evidential claims made by the festivals and event organisers. If the project were to be replicated, more time would probably have been spent on preparations and rationale.

The final event in Brussels 29 Nov – 1 Dec 2010 encountered some specific challenges. The 17 presentations were scheduled to be shown at the Royal Belgian Institute for Natural Sciences, without really being connected to an event like a festival or similar. Furthermore, the considerable range of formats, target groups and presentations (workshops, games, plays etc) made it complicated to create anything else than a "presentation of presentations" for the particular museum general public audience.

Innovative dimensions

The 2WAYS project included two major sub-projects, both of which novel in their approaches towards a more inclusive and innovative science communication discourse.

Firstly, the 2WAYS Life Science project presentations, fulfilling two significant set of goals: making interesting and engaging presentations in a new way, and in parallel, gaining new knowledge and experience on the actual collaborative work between communication experts and state-of-the-art research project scientists.

Secondly, the Young Europeans Science Parliament marked the introduction of a more inclusive approach towards citizens – in this case students – participation in actual policy making concerning scientific issues with ethical and political deliberations.

17 European projects or collaborations were selected, primarily from the European Commission's database of EU funded research projects within the field of Life Sciences. Only projects with partners in at least two Eusea members' cities (i.e. cities where there is a science festival or similar event) were chosen, and members of the local research teams were asked to collaborate with the local Eusea member in a way that each project formed a group representing two research teams and two science events teams. The research teams knew each other through their joint project, and the Eusea members through Eusea – but none of them had practically worked together previously. As a matter of fact, many of the researchers were quite new to the idea of science communication, and various interventions, such as workshops with PhD students were used to prepare for the project.

Orientation towards societal challenges

- Health, demographic change and wellbeing
- Food security, sustainable agriculture and forestry, marine and maritime and inland water research, and the Bioeconomy
- Secure, clean and efficient energy
- Smart, green and integrated transport
- Climate action, environment, resource efficiency and raw materials
- Europe in a changing world – inclusive, innovative and reflective societies
- Secure societies – protecting freedom and security of Europe and its citizens

2WAYS, being an FP7 project, was not designed with the Horizon 2020 challenges in mind. Nevertheless, certain aspects of the project are relevant in the H2020 context as well. Firstly, the 2WAYS project was really about communication, dialogue and participation in science and scientific issues for the general public – partly through the 17 developed presentations, partly through the 30 parliaments carried out for students, 16–19 years old.

The science parliaments for students focused on four defined issues connected to the kind of genetic information that has become available through scientific progress: who should have access, under what circumstances? And what if there is a predisposition for criminality, is it then possible to judge and sentence people with a specific set of genes? Above all, however, the parliaments meant a big step forward in introducing dialogue and participatory formats in science events.

Finally, the impact study was meant to provide specific indications or even evidence of effects and impact of taking part in science communication events and activities. As such, the impact study contributed to the increasing amount of reports and data on the evaluation of events and activities within the field. However, there are significant needs to continue to develop the field of impact and effects from a range of different perspectives.

Similar initiatives
- Junior science café, Germany (http://www.juniorsciencecafe.de)
- See ACE – Act Create Experience and Imagine Chicago in this catalogue

NanoDialogue

The NanoKommission was founded in 2006 by the German Federal Government as a central national dialogue platform and was organized and supported by the Federal Ministry of Environment, Nature Conservation and Nuclear Safety. The NanoKommission conducted two phases of dialogues and subsequently a series of 4 expert dialogues. The NanoDialouge aims to foster exchange among societal stakeholders on the opportunities and risks presented by nanotechnologies to ensure a responsible and sustainable use of nanomaterials. A total of more than 200 experts have been engaged on a voluntary basis in these dialogues.

Context

As part of its Nano Action Plan, the German Federal Government established and funded the NanoKommission in 2006 as a central national dialogue platform. The German NanoKommission had two phases of dialogue (2006–2008; 2009–2011). Subsequently, the BMUB organized a series of 4 expert dialogues (FachDialoge 2011–2012 and 2013–2015), to continue the NanoDialogue discussions in a focused way with a format of 2-day stakeholder Dialogues.

In all (also the current) activities were involved representatives of the scientific community, industry, environmental associations, consumer and women's organisations, trade unions and churches, government and government agencies.

Background information

Name: NanoDialogue

Organizer: German Federal Ministry of Environment, Nature Conservation and Nuclear Safety

When: 2006 – Ongoing

Where: Germany

Who: Dr. Anke Jesse, Ministry for the Environment, Nature Conservation, Nuclear Safety and Building

Additional information:
http://www.bmub.bund.de/en/topics/health-chemical-safety-nanotechnology/nanotechnology/the-nanodialogue/

Initiative characteristics

PE category: Public Deliberation

Mechanism: Technology Assessment

Main purpose of initiative: Dialogue/deliberation

Geographical scale: National

Organizing entity: National governmental body

Target groups: Stakeholders groups, experts, public officials,

H2020 Societal Grand Challenge(s):
- Health, demographic change and wellbeing;
- Climate action, environment, resource efficiency and raw materials

Aims and mechanisms

The aim of the activity is to foster exchange among stakeholders in society on the opportunities and risks presented by nanotechnologies and in doing so help to ensure responsible and sustainable use of nanomaterials.

The main objective is to facilitate an effective communication between technology development stakeholders in the realms of science, industry and politics, and stakeholders in civil society. In an open process, all representatives have the opportunity to discuss their positions and appraise the issues in a respectful way. All participants are able to base its work on an extensive network of dialogue on nanotechnologies in Germany.

Results

The NanoKommission: 2006–2011:

It became clear in the course of the discussions in the NanoKommission and their Issue Groups that the stakeholders agree on a number of fundamental issues; views on how this should translate into socio-political action vary considerably, especially concerning regulatory issues. This is reflected in the concluding recommendations of the NanoKommission (two recommendation reports).

The Expert Dialogues:

Around 30 representatives from stakeholder groups, government ministries and authorities are invited to participate and discuss about a special theme – like 'Nanomedicine' or 'Aquatic Environment'. The BMUB publish reports on the issues covered including the outcomes of the Stakeholder Dialogue events. The focus of discussion at these events will be to identify the socio-political context of each of the issues in question.

The impact of all dialogues is to support an effective and open communication between all stakeholders.

Advantages

The focus of discussion at these events will be to reach a better understanding in each of the stakeholder groups and to identify the socio-political context of each of the issues in question. The outcomes of the Stakeholder Dialogues are published. Therefore, each of the stakeholders will have the opportunity to transfer these understanding to his own group and also to other groups.

Obstacles

Funding is a limiting factor. For some stakeholder groups it's necessary to fund the travel coasts.

The Stakeholder Dialogues also work well with a limited funding – because there are not more than 20–30 participants involved.

A challenge is to involve industries. They often do not attend the workshop because they don't want to discuss their products.

Innovative dimensions

In each of the dialogue phases stakeholder groups debate particular issues in greater depth. A total of more than 200 experts were engaged on a voluntary basis in the debate of chances and risks of nanotechnology – for a responsible use of nanomaterials. All discussions took place in a respectful and way under the aim of learning from each other.

Orientation towards societal challenges

- Health, demographic change and wellbeing
- Food security, sustainable agriculture and forestry, marine and maritime and inland water research, and the Bioeconomy
- Secure, clean and efficient energy
- Smart, green and integrated transport
- Climate action, environment, resource efficiency and raw materials
- Europe in a changing world – inclusive, innovative and reflective societies
- Secure societies – protecting freedom and security of Europe and its citizens

Similar initiatives

- Citizen panels on nanotechnologies (nano-imaginaries), NanoSoc project, 2007, Netherlands (http://www.nanosoc.be/index.asp)
- The National Citizens' Technology Forum (NCTF) on nanotechnology, 2008 US (A. Anderson, Ashley and Jason Delborne and Daniel Lee Kleinman (2013): Information beyond the forum: Motivations, strategies, and impacts of citizen participants seeking information during a consensus conference. Public Understanding of Science 22(8), p. 5)

World Wide Views on Global Warming

World Wide Views on Global Warming was a two year project that aimed to give citizens an opportunity to express their views on some of the key issues negotiated at COP15 and engage policy makers in a dialogue about citizens' views. The project was the first-ever global citizen consultation initiative as it had citizens at multiple sites debating the same policy related questions on the same day. The initiative demonstrated that citizen participation in global decision-making process was practically feasible and politically meaningful; it fostered considerable media attention and engaged decision-makers in a dialogue regarding citizens' views.

Context

As markets, technologies and environmental issues become increasingly global in scale, so does policymaking. In this new reality, the distance between citizens and policymakers increases, thereby diminishing the citizens' sense of ownership in decision-making. This creates a need for new initiatives to bridge the widening democratic gap.

Global warming requires global policymaking. Despite this, climate policy debates have to a large extent been limited to scientists, politicians and powerful interest groups, further widening the gap between citizens and policymakers.

World Wide Views on Global Warming (WWViews) – the first-ever global citizen consultation, leading up to COP15 in Copenhagen – was initiated to help close this gap and demonstrating one way of doing so in a politically meaningful and practically implementable way.

Background information

Name: World Wide Views on Global Warming

Organizer: The Danish Board of Technology in collaboration with partners in the World Wide Views Alliance

When: November 2007 – December 2009

Where: Multisite and global

Who: Bjørn Bedsted, Danish Board of Technology

Additional information: http://www.wwviews.org/

Initiative characteristics

PE category: Public Deliberation

Mechanism: Citizen Panel (WWViews citizen consultation)

Main purpose of initiative: Consultation, dialogue/deliberation

Geographical scale: Global (38 countries)

Organizing entity: Non-profit trading foundation

Target groups: Lay publics, public officials, COP- delegates

H2020 Societal Grand Challenge(s):

- Secure, clean and efficient energy;
- Climate action, environment, resource efficiency and raw materials

The Danish Board of Technology (DBT) coordinated the initiative with different degrees of collaboration with over 50 partners in 38 different countries; all members of the World Wide Views Alliance, which was established for this purpose. The partners typically include public councils, parliamentary technology assessment institutions, non-governmental civil society organizations and universities. A list of partners involved is available at www.wwviews.org

Aims and mechanisms

WWViews aimed to give citizens an opportunity to express their views on some of the key issues negotiated at COP15. It aimed to do so in a manner that would provide policy makers with information about those views and engage them in a public debate about them. The reasons for doing so were equally practical (offering decision makers knowledge about the public support for alternative developments and policies can lead to policies that are more easily implemented) and principled (it is only fair that citizens who are going to live with the consequences of decisions made through international climate negotiations are also offered the opportunity to influence them).

The regulation of technologies and environmental issues is increasingly coordinated through international negotiations, and while experts, NGO's, industry and strong interest groups have found ways to influence and interact with such negotiations, no mechanisms are in place to allow the views of citizens in general to do so. The DBT has contributed to the development and implementation of such (citizen participation) mechanisms at the local, national and European level. COP15 was a welcome and timely opportunity to develop a mechanism for the global level.

World Wide Views is a multisite citizen consultation. It was developed for the purpose of making cross-national citizen consultations, but it can also be used at the regional and national level.

The core of the method is to have citizens at multiple sites debate the same policy related questions on the same day. Each site had approximately 100 citizens participating, selected to reflect the demographic diversity in their country or region.

Before the citizen consultations, participants received written information material presenting facts and opinions about some of the key issues negotiated at COP15. Information videos were screened at the actual consultations as an introduction to each thematic session.

The questions put to the citizens were identified through a comprehensive consultation of policymakers and stakeholders worldwide in order to address the most pertinent and disputed issues, debated in the lead-up to COP15. The information material was designed to present citizens with pros and cons of voting one way or another on the questions at hand. The material was reviewed by a scientific advisory board and both questions and information material was reviewed by citizen focus groups in different parts of the world prior to being finalized. The videos presented a summary of the written information material.

All meetings followed the exact same format: The day was divided into 4–5 thematic sessions. An information video introduced the thematic issue and citizens were then presented with a set of questions (3 to 5) with pre-prepared answering options. There was also a recommendation session – see website.

Groups of 5–8 citizens deliberated on the questions before them, assisted by a trained table moderator. At the end of each session, of between 30 minutes and 1 ½ hour, citizens voted individually on the questions.

Votes were then collected and reported to the World Wide Views website, where results could be compared as they arrived throughout the day – starting in Asia and finishing on the American West Coast. Comparisons could be made between countries, continents and different groupings, such as developing and developed countries. The program also included a session in which citizens made their own recommendations for policymakers.

The results were subsequently analysed and presented to policymakers – both by the responsible partners at the national level (partner in the WWViews Alliance) and by the coordinators (DBT) at COP15 in collaboration with some of the partners in the WWViews Alliance.

Results

Partners in the WWViews Alliance organized a large number of policy dialogues (it was part of the method guidelines to do so) with key policy makers, both prior to the COP, during the COP, and after the COP. There was also considerable media attention but to a varying degree in participating countries. Considering the gap between the general support among citizens worldwide for fast and strong action to deal with global warming and the results delivered at COP15, it would make no sense to argue that WWViews had any effect on the results of the negotiations. The main purpose of WWViews, however, was not to advocate a particular result but rather to engage policy makers in a dialogue about citizens' views; to make them reflect on and relate to them. To some extent, it was in the hands of the partners of the WWViews Alliance to make this happen through the dialogues organized by themselves, but it was also an ambition that policy makers would take this one step further and use the WWViews results as part of the general public debate. This did happen to some extent, albeit not to the extent hoped for.

WWViews showed, by the power of example, that citizen participation in global policymaking can in fact take place in a meaningful way. This led to collaboration with the UN Secretariat to the Convention on Biological Diversity about World Wide Views on Biodiversity in 2012 leading up to the biodiversity COP11 in Hyderabad, where parties to the convention adopted a decision to support initiatives such as WWViews.

The creation of the World Wide Views Alliance – a global network of partners able to collaborate about citizen participation – was a significant outcome in its own right, as was the capacity building it resulted in. Partners in the WWViews Alliance have used the method for other purposes (at the local, national and European levels) and have used the initiative as a stepping stone to introduce other kinds of citizen participation in their countries.

The results of WWViews is still an interesting source of information, e.g. about the views of citizens from a number of developing countries on global warming. For several of those countries, no other source of information existed at the time and probably still doesn't.

WWViews also led to an ongoing academic debate about global citizen participation, environmental governance and the WWViews method. In combination with the internal evaluation made by partners in the WWViews Alliance, this has led to an ongoing discussion about the design and usefulness of the method.

Advantages

Although it is expensive to organize at the global level, the method is very cost effective compared to other transnational citizen participation methods in terms of costs per participating citizen. It has the advantage that once the project infrastructure is in place, a WWViews citizen consultation can be scaled up to include all countries in the world and also multiple consultations within each country (e.g. one in each of country's main regions).

The method is fairly simple and easy to apply for different kinds of partners in different parts of the world, not all equally familiar with citizen participation.

The method is open-ended in the sense that it involves certain key activities that have to be performed by all in a uniform way in order to allow for comparisons, but other projective activities (such as outreach) can be developed to fit the local/national political context. Also, other project elements (such as online engagement modules and educational materials) can be added, should funding be available.

The method requires and enables trans-national collaboration between the involved partners, while being flexible to the time and efforts that partners wish to invest.

The initiative led to considerable media interest, albeit not to the extent that it potentially could have. The academic interest has also been considerable and sustained.

The initiative demonstrated that citizen participation in global decision-making process was practically feasible and politically meaningful. It paved the way for World Wide Views on Biodiversity in 2012, initiated by DBT in collaboration with the UN's CBD Secretariat. It has also been used for a trans-European citizen consultation on sustainable consumption in 2014 in-

volving 11 European countries: http://www.pacitaproject.eu/?page_id=1519 and national multisite citizen consultations in Denmark and France.

The initiative has become fairly well known among policy makers in a number of countries and in some UN agencies. It has paved the way for collaboration about a new citizen consultation, World Wide Views on Climate and Energy, with the UN's UNFCCC Secretariat.

Obstacles

Developing the method for and implementing a global citizen consultation is demanding and time consuming. Although the good collaboration with project partners helped to reduce the organizational stress it caused, the DBT ended up spending more time and efforts than initially anticipated. Fundraising proved to be particularly difficult at the height of in the financial crisis, but external funding was received from a number of sources and partners from richer countries helped sponsor the participation of those in poorer countries.

There was some initial debate among partners about whether or not the method developed would be equally applicable and politically meaningful in different cultural and political contexts, but it proved to be a relatively minor issue, and local strategies were developed when needed to deal with issues such as the difficulty of some citizens to speak up in public deliberations with fellow citizens of differing socio-cultural status.

Although attempts were made, no official ties were established with the UNFCCC Secretariat or the Danish government as COP15 host. This made it more challenging to fulfil the purpose of associating the practice of citizen participation with the negotiation process. However, several high-level dialogues with policy makers were organized. In 2012 the situation changed, when the UN's CBD secretariat became co-initiator of World Wide Views on Biodiversity and the initiative was thus officially recognized as having a place in the COP process.

There were lots of practical obstacles, such as getting visas for partners going to the training seminar in Copenhagen, handle multiple translations and sharing information between a large group of partners.

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Innovative dimensions

World Wide Views on Global Warming was the first-ever global citizen consultation and as such a novelty in practical terms. While building on well-known methods and principles, it introduces a method of its own. The organization of multiple and simultaneous consultations organized by different partners (often several working together to organize one, national consultation) and in different language on all continents is a unique feature of the method. The building of the partner network (the WWViews Alliance) and the capacity of partners not previously familiar with citizen participation was also a new to citizen participation.

Perhaps, the most defining novelty of the initiative was to show that is doable and meaningful to introduce practices of citizen participation to global policy making processes. Cultural and political traditions for citizen participation have developed at the national and regional (mainly European) level, but it is new to argue for and demonstrate the usefulness and democratic pertinence of developing practices for global governance. There seems to a widespread understanding of and support for doing so among (some) policy makers around the world for whom the democratic rationale appears evident.

There also seems to be support in parts of the UN system for exploring the practice of citizen participation as a supplement to the space made in the negotiation processes for civil society organizations.

Orientation towards societal challenges

- Health, demographic change and wellbeing
- Food security, sustainable agriculture and forestry, marine and maritime and inland water research, and the Bioeconomy
- Secure, clean and efficient energy
- Smart, green and integrated transport
- Climate action, environment, resource efficiency and raw materials
- Europe in a changing world – inclusive, innovative and reflective societies
- Secure societies – protecting freedom and security of Europe and its citizens

Since WWViews addresses policy options for dealing with global warming, there is a clear relation to challenge 5. Since some of the policy options addressed relate to transition to sustainable energy sources, it has some relation to challenge 3.

> **Similar initiatives**
>
> - Meeting of Minds, European Citizens' Deliberation on Brain Science, 2005-2006 (http://www.kbs-frb.be/otheractivity.aspx?id=193934&langtype=1033)
> - Citizens' Panel on Edmonton's Energy and Climate Challenges, 2012, Canada (http://participedia.net/en/cases/citizens-panel-edmonton-s-energy-climate-challenges)
> - See CIVISTI – Citizen Visions on Science, Technology and Innovation in this catalogue

BBSRC Bioenergy Dialogue

The aim of the BBSRC Bioenergy Dialogue was to explore the public views on bioenergy, and consider those views in the strategy and policy development in bioenergy. The project also aimed at piloting a novel approach to public dialogue. 11 dialogue events were run with citizens engaging in discussions about bioenergy by means of democs card games and future scenarios among other prompts. The project demonstrated that a distributed approach to dialogue is feasible and it produced useful findings about public views around bioenergy, which have reassured BBSRC about the direction the organization is taking in terms of supporting bioenergy research.

Context

The initiative was organized by BBSRC, with joint funding and support from Sciencewise Bioenergy (as part of industrial biotechnology and bioenergy) is a strategic research priority for BBSRC. The UK has committed to meeting international targets for reducing carbon emissions and industrial biotechnology is believed to offer novel solutions through the use of plants, bacteria, algae and fungi as non-fossil sources of renewable energy: bioenergy. There is potential for major scientific and technological advancement in the bioenergy area. However, its production must be socially, economically and environmentally viable to be effective as a significant contributor to the UK energy mix. BBSRC is committed to public engagement and dialogue around the research it funds and, on behalf of the UK Research Councils, undertook this dialogue to help ensure that contemporary public views, concerns and aspirations were taken into account by research funders and researchers as more bioenergy solutions are developed.

Background information

Name: BBSRC Bioenergy Dialogue

Organizer: Biotechnology and Biological Sciences Research Council

When: September 2012 – April 2014

Where: UK

Who: Dr Emma Longridge, BBSRC -Biotechnology and Biological Sciences Research Council

Additional information:
www.bbsrc.ac.uk/society/dialogue/activities/bioenergy-dialogue/bioenergy-dialogue-index.aspx

Initiative characteristics

PE category: Public Deliberation

Mechanism: Formal public dialogue

Main purpose of initiative: Dialogue/deliberation

Geographical scale: National

Organizing entity: Research council (funded by by the Government's Department for Business, Innovation and Skills (BIS))

Target groups: Lay publics, experts, public officials

H2020 Societal Grand Challenge(s):
- Secure, clean and efficient energy

In addition, the project aimed to pilot a novel, distributed approach to dialogue. Rather than engaging a relatively small number of people over only a couple of months as with a conventional dialogue format, we wanted to see whether more people could be engaged over a longer period of time, through an iterative process, to provide ongoing input to BBSRC decision making.

The project was run in-house by appointing a 'Dialogue Coordinator', and analysis of findings was performed by Ipsos MORI. BBSRC-funded researchers, public engagement practitioners and BBSRC were the main organisers of events, although one event was led by a member of the public. Participants in events were not selected, events were advertised (locally and through BBSRC) and interested individuals could turn up and join in. Stakeholders were engaged through the Oversight Groups for the projects, and indirectly through the use of external reports as the dialogue materials were developed.

Aims and mechanisms

The formal aims of the dialogue were:
- To explore with members of the public, their views in regard to bioenergy, and consider those views in our strategy and policy development in bioenergy
- To pilot a novel approach to public dialogue, to develop an ongoing, informed discussion between ourselves, our research community, the public and other stakeholders, around bioenergy research

BBSRC developed a 'toolkit' of resources so that researchers and others could set up and run dialogue events independently. The toolkit contained a set of 'future scenarios' and associated activities, a Democs game and guidelines for setting up and running an event.

The future scenarios, set 20 years ahead, were designed to encourage discussion by being provocative projections of what the future might look like if particular decisions are taken concerning the use, or non-use, of bioenergy in the UK. The scenarios use stories and scripts for short plays involving fictitious characters. 'Cue cards' and 'Character cards' provide additional prompts to engage participants in the discussion.

Democs card games are designed to help small groups of people engage with complex topics. A bespoke version on bioenergy was produced for the dialogue project to give participants information, and a structure to share and feedback ideas on bioenergy.

The main mechanism for feedback was through forms completed by participants and organisers at the end of each dialogue session. These forms were returned to BBSRC and were independently analysed and reported by Ipsos MORI.

11 events were run, some were led by BBSRC centrally and one was led by a member of the public, but most were organized by BBSRC-funded researchers (with support as required from BBSRC). Events did not use professional facilitators, researchers and public engagement professionals ran and facilitated the events and other researchers provided 'expert' input. Participants were not recruited as such, but events were advertised so that anyone interested could attend. Some events took place with pre-existing groups, University of the Third Age for example.

Although there were many things that worked well about the methodology, there were several key challenges:
- More resource than expected was required to encourage and support different groups to run dialogue events, which limited the number of events that were run within the time available
- Organisers sometimes felt that if they had had better facilitation skills they could have handled discussion better
- The members of the public who took part, being self selecting, were not representative and tended to be from older and younger age groups, more highly educated than the general public and often with a background in science, which places limitations on the utility of the findings
- The mechanism of capturing participant views via feedback forms limited the depth of response that it was possible to achieve. It would be interesting to explore other mechanisms of capturing participant views that might give more depth but that are still easy to use.

Results

The dialogue was formally evaluated by Collingwood Environmental Planning, http://www.bbsrc.ac.uk/society/dialogue/activities/bioenergy-dialogue/bioenergy-dialogue-project.aspx and was found to be largely successful in meeting its objectives although there were a number of lessons to be learnt for future projects.

The project produced useful findings about public views around bio-energy, which, although not directly influencing particular decisions, have reassured BBSRC about the direction the organization is taking in terms of supporting bioenergy research.

BBSRC has also learnt a great deal about the process of conducting dialogue in a distributed way, including how such projects should be governed (the distributed governance for the project was not an ideal model) and where some of the challenges are in terms of the methodology.

The resources were well received; it was felt the toolkit made it relatively easy for individuals to set up a dialogue event. Indeed, some of the key impacts seem to have been in the increased understanding of and interest in dialogue approaches shown by the bioenergy researchers who took part. They fed back that they were keen to get involved in the events and felt that their specialist input was appreciated by participants. Several of those who ran dialogue sessions expressed an increased confidence and an interest in continuing to run this kind of activity.

Advantages

This project has demonstrated that a distributed approach to dialogue is feasible, although we cannot claim to have perfected the methodology. Within the constraints of the project, we engaged as many public participants as in previous 'traditional' dialogues and engaged more researchers over a longer period of time. The project was considerably cheaper than traditional dialogues.

The model could easily be transferred to other topics and contexts. Some of the generic resources about setting up discussion events could be reused, and new subject-specific stimulus could be produced. With sufficient coor-

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dination, dialogue events could be conducted within individual countries, or across a number of countries.

Although we didn't manage to make the process iterative within the timescale of this project, there remains the possibility that, if run over a longer period, there could be more opportunity for findings from early events to feed into those run at a later date.

Obstacles

Initially, it was challenging to encourage and support others to run dialogue events. However, this may be a result of our underestimations of how long this might take rather than being a problem per se as this became easier and I think, had the project run for longer, the momentum would have continued to build. It was particularly difficult to reach out to organisations who did not previously have a connection with BBSRC, to encourage them to run events.

The members of the public who took part in this project were not representative of the UK public; due to the nature of the events that were set up, participants tended to only include people with a prior interest and they tended to come from particular age groups. Whilst this does not necessarily matter if the findings are used with this in mind, the findings would carry greater weight with decision makers if a wider cross section of publics had been involved. Further development of the model would be required to ensure that this could happen, to encourage and support researchers to find ways to engage with hard to reach audiences and perhaps by supplementing events with centrally-led events using a recruited group of public participants to 'fill in the gaps'.

Organisers reported that they sometimes felt that if they had had better facilitation skills they could have handled discussion better. In addition, the mechanism of capturing participant views via feedback forms limited the depth of response that it was possible to achieve. It would be interesting to explore other mechanisms of capturing participant views that might give more depth but that are still easy to use, which might also include exploring other ways of facilitating events, or ways to give organisers greater confidence in facilitation.

Innovative dimensions

The dialogue methodology was innovative for BBSRC, taking a distributed approach rather than a set piece 'traditional' approach. The novel approach is evident in a number of ways:
- An internal Dialogue coordinator was appointed to the project, rather than contracting an external organisation to conduct the work (although Ipsos MORI were later contracted to conduct the analysis).

- Dialogue events were led by bioenergy researchers, public engagement practitioners and members of the public leading to increased involvement of researchers and a wider geographical spread of events.
- Different kinds of stimulus materials were used, including a Democs game
- Dialogue events happened over several months rather than several weeks.
- Had time allowed, the model would have allowed for a flexible, iterative discussion so that events held later could discuss and build on the conclusions of earlier events, as well as developments in research.

Orientation towards societal challenges

- Health, demographic change and wellbeing
- Food security, sustainable agriculture and forestry, marine and maritime and inland water research, and the Bioeconomy
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- Europe in a changing world – inclusive, innovative and reflective societies
- Secure societies – protecting freedom and security of Europe and its citizens

The findings from the dialogue in terms of the topic of bioenergy are likely to be relevant particularly for challenge 3 above, but also potentially for challenges 2, 4 and 5. In addition, our learnings about distributed dialogue may be relevant for challenge 6.

> **Similar initiatives**
> - "Futur" research dialogue (2001-2005), Germany (http://forlearn.jrc.ec.europa.eu/guide/7_cases/futur.htm)
> - See the NanoDialogue in this catalogue

Soapbox Science

Soapbox Science is a highly portable, reproducible, and flexible science event that is designed to engage citizens across the whole spectrum of society and to improve the visibility and perception of women in science. Soapbox Science places female scientists on soapboxes in busy urban environments for them to engage with passers-by about their science. The project has, since its establishment in 2011, raised public and media awareness regarding scientific research and women in science and widened the career opportunities for over 100 female scientists.

Context

Sumner & Pettorelli established Soapbox Science in 2011 in a drive to improve the visibility and perception of women in science. They now run it as a nationwide event series, as a platform to showcase female scientists at the height of discovery and innovation. In short, Soapbox Science puts female scientists on soapboxes in busy urban environments and talk to the passers-by about their science. Since its conception, the initiative has helped boost the public profile and widen the career opportunities for over 100 female scientists, with that number set to triple in the next two years. Funding comes from various sources, including universities, the Science and Technology Facilities Council, the Natural and Environmental Research Council, L'Oreal UK and Ireland, University of Bristol and the Zoological Society of London.

Background information

Name: Soapbox Science

Organizer: Dr Seirian Sumner & Dr Nathalie Pettorelli

When: May 2011 – Ongoing

Where: UK

Who: Dr Seirian Sumner, University of Bristol

Additional information: http://soapboxscience.org/

Initiative characteristics

PE category: Public Deliberation

Mechanism: Science event

Main purpose of initiative: Awareness raising, dialogue/deliberation

Geographical scale: National

Organizing entity: Academic institution, scientists

Target groups: Lay publics, researchers

H2020 Societal Grand Challenge(s):

- Europe in a changing world – inclusive, innovative and reflective societies

Aims and mechanisms

1) To achieve wider participation in public engagement of scientific research;
2) To promote dialogue between local people and local scientists;
3) To inspire the next generation of scientists, irrespective of gender or background;
4) To promote female scientists, and empower them with new skills and confidence;
5) To provide accessible role models for women in STEM, and establish Soapbox as a leading national voice for women in science.

Soapbox Science's format is a fresh, no-frills grass-roots approach to bringing science to *all* people on the streets, *especially* those who wouldn't otherwise have come across science in their daily lives. The events facilitate the direct interaction between scientists and the public, enabling the public to talk first hand with scientists and for scientists to share their thirst for science and their passion for being a scientist. Speakers are recruited each year following an open call advertised on the project website (www.soapboxscience.org), through twitter (@soapboxscience) and via general invitations sent to relevant universities, research organisations and learned bodies. Each event is organized by local organisers, who work closely with the project's co-founders (i.e., Drs Sumner and Pettorelli). Local organisers generally seek the help of volunteers to run their event; volunteers are recruited through the organisers' network, and through open calls on the project's website and social media channels.

Soapbox Science events run for 3 hours over an afternoon in the summer (usually June or July). Each event is divided into one-hour sessions, with 4 to 5 speakers per session. Speakers stand on custom made "Soapbox Science" soapboxes, arranged in a semi-circle, facing slightly inwards, to facilitate the crowds' movements between speakers. Speakers tend to stay for the full 3 hours, mingling with fellow speakers in the adjacent café prior to and after their session to swap notes on their Soapbox experiences, learn about each other's research, or join in the debates around the other sessions. Each Speaker is assigned a volunteer host, who ensures they are fully supported, and who can help by holding any props or perform any science-related antics the Speaker might like to use them for! Volunteers tend to be PhD students, for whom this is an unprecedented opportunity to interact with some of the UK's top scientists.

Results

The prime audience of Soapbox Science is the unintentional public, from the widest spectrum of society – the people who have not had the opportunity /inclination/ financial means to meet a scientist or learn about UK science. Evaluation of all events has taken place since 2013, and Soapbox Science has now a proven impact in reaching this audience. Evaluation of our 2013 London event showed that we reached 1,025 people in 3 hours. Questionnaires were completed by 78 audience members: 56% had not known about the event beforehand, and 96% had not been to a Soapbox event before. Thus the event successfully attracts an the intended audience of the 'unintentional public', maximizing its potential impact for achieving wider engagement with science.

With this target audience we aim to achieve three types of impact: i) Facilitate a positive science engagement experience with people who would not have otherwise attended a science event; ii) Increase public awareness of women in science; iii) provide inspiration and role models for a future generation of young scientists, and especially females in science. Again, evaluation data from our 2013 London event suggests that the Soapbox format achieves each of these desired impacts: i) Visitors stay long enough to learn some science: Mean dwell time was 4.8 mins, max 41 mins; the majority of visitors were able to relate a fact/topic they had learned. Their comments (n=78 questionnaires) included that they *"would not have made an effort to come to a science event"*…However, 100% said they would come to another Soapbox Science event. Audience members also stated the interactive format of Soapbox Science, which allowed them to speak with scientists, as one of the most enjoyable features of the event. ii) 32% of people reported the event had changed their views of women in science, making them more aware of the issue. One of the students interviewed said: *"It has led me to believe that women can also excel and attain success in such a complex field"*.

iii) Family groups tended to stay the longest, with average dwell time of 27 mins. Students and school groups interviewed reported that the event had had a positive effect on their view of women in science by creating more awareness. One student said it had made her want to pursue a career in science. Another said: "*It has reinforced my gratitude towards the substantial role that science plays in everyday life*".

Soapbox Science is more than a one day event: through the work of its organizers and past Speakers, the event is growing exponentially, and developing a large, international community of people interested in STEMM, women's careers in science and science communication and outreach.

Twitter is an excellent tool for disseminating information related to the event and its mission: we started our Twitter account (@SoapboxScience) in 2012 and already we have acquired nearly 2,700 followers. Followers are 58% female and predominantly interested in science and technology, with the account generating 2.6k impressions per day on average. This community has been vocal on many aspects of the current STEMM culture and functioning.

Soapbox Science then provides accessible role models for women in STEMM, and is establishing itself as a leading voice for women in science. It is already nationally cited alongside the UK's Athena SWAN program as an effective approach for addressing gender gap in science careers.

Advantages

The event provides a unique and unintimidating platform for communicating science and technology: each speaker can engage effectively with the general public in a relaxed and interactive way, addressing an audience that wouldn't necessarily seek to learn about such topics. In that respect, Soapbox Science is the ultimate dissemination tool, targeting communities that don't generally come across scientists, or even science, in their everyday lives.

Our Speakers also benefit; they enjoy substantial exposure and media coverage, through twitter, blogs, podcasts, you-tube videos and media coverage in the scientific and lay media (e.g. previous speakers were covered by the BBC, The Guardian, Time Out, The Times (Eureka), Times Higher Education, Le Nouvel Obs, Nature, Science and New Scientist). We help

Speakers develop new skills in communication and engagement through workshops with us and professional science communicators, like science comedian Robin Ince and broadcaster George McGavin. Such profile boosting and skills development has an important impact on confidence and capacity, potentially improving career prospects. Soapbox Science alumni have gone on to become outreach officers and Athena SWAN committee members within their institutions, and the next stage of evaluation seeks to quantify and qualify this impact.

The main feasibility advantage of the initiative is its incredible value for money. Soapbox Science is a low budget engagement activity that indeed delivers subsequent impact in terms of audience reached and increased visibility for the speakers. It is therefore easily transposable to a range of locations and environments, with significant expansion planned for the future.

Obstacles

Our main obstacle is securing long-term funding, which is key to securing the viability of the project in the long-term. Such lack of funding has meant that for years, the two founders had to undertake all the logistical aspects related to the organisation of events and development of the initiative as a 'twilight job', alongside their demanding careers as mid-career academics. This has recently changed, as Soapbox Science was awarded a two year grant from the Science and Technology Facilities Council, which allowed the recruitment of a part-time media coordinator and event organizer.

Another obstacle is the low proportion of women in science itself, as this reduces the pool of potential speakers. Asking busy academics to take time from their professional lives to participate in an outreach activity such as this is a recognised obstacle to science communication events generally. However, an attitudinal shift that is increasingly recognising the value of outreach as part of research may see this change, with top-down support for science engagement growing. Additionally, initiatives such as Soapbox Science compliment the work of programs like Athena SWAN, which aim to increase the proportion of women in science, will, we anticipate, have a positive feedback effect.

Innovative dimensions

Soapbox Science combines an accessible engagement format, a motivation to reach a broad community of people, and an aim to promote the visibility of women in science to the general audience: this combination is unique. To date, although there are informal science events such as Guerrilla Science that bring science engagement to non-traditional locations, there is no science event in this format in the UK, least of all one that specifically focuses on women in science. Several national initiatives (RCUK WISE, Athena SWAN) are dedicated to tackle the gender bias in STEMM, but these do not specifically address the lack of visibility that women in STEMM encounter. Moreover, these are all online-based, with annual conferences that generally preach to the converted. Science-based communication events are common across the UK (e.g., Royal Society science week, I'm a Scientist Get me out of here, Big Bang Fair). However, these events are often not free, and mostly target science enthusiasts and school children.

Soapbox Science is also innovative in its dual aims; not only to engage with the public, but also to have a lasting positive impact on the professional life of the participating women in science. Through providing training, engagement experience, networking opportunities and media exposure, in addition to its connections with organisations such as Athena SWAN, Soapbox Science has developed an innovative way of boosting the personal, public and scientific profile not only of women in science in general, but also our participating speakers in particular. These speakers, which include noteworthy researchers such as Dame Lesley Yellowlees and Dr Maggie Aderin-Pocock, become themselves advocates for the program, and alumni have gone on to set up Soapbox Science events in their own organisations and institutions.

The experience and positioning of Soapbox Science also allows the entity to become a voice in wider discussions about women in science, harnessing the shared experiences of our speakers to highlight issues, share knowledge and call for change in science culture towards greater inclusivity, one that is more reflective of the population in general.

Soapbox Science is also innovative in its rigorous evaluation strategy, which aims to gather robust data that can be used for policy and advocacy purposes.

Soapbox Science is a highly portable, reproducible, and flexible event that is designed to engage across the whole spectrum of society, and particularly with people who would not otherwise seek out scientific events. This is achieved by bringing cutting-edge science to high-footfall urban areas, in an accessible, fun and approachable way. Unlike most other science events, a 'Soapbox' audience will not have necessarily planned to come and learn about science, rather, they happen across a group of scientists, with whom they can interact, as they stroll down busy streets.

Soapbox Science has been incredibly successful in London since 2011, achieving high footfall and high-profile national and international press coverage. Due to popular demand we began a national expansion in 2014 with 4 UK venues, and in 2015–2016 we are expanding to include at least 10 locations. We believe Soapbox Science is quickly becoming a leading advocate for improving the visibility and representation of women in STEM in the UK and internationally.

Orientation towards societal challenges

- Health, demographic change and wellbeing
- Food security, sustainable agriculture and forestry, marine and maritime and inland water research, and the Bioeconomy
- Secure, clean and efficient energy
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- Europe in a changing world – inclusive, innovative and reflective societies
- Secure societies – protecting freedom and security of Europe and its citizens

Soapbox Science is very relevant to the sixth challenge under Horizon 2020 particularly because:

1. Its innovative format engages and addresses active citizenship with adults, families and the younger generation who would not otherwise encounter the research discussed in Soapbox Science in a creative learning environment.

2. Researchers themselves benefit from training and skills that increase their confidence, visibility and employability. This leads to more professional development opportunities.

3. By providing inspiring female role models, Soapbox Science has been demonstrated to encourage young women to consider science as a career. This in turn will help lead to a diverse, inclusive scientific workforce, addressing disparity in gender equality in roles across science.

4. Furthermore, through a combination of the above, Soapbox Science has the capability to reach and inspire young persons at risk of social exclusion, which affects 12 million more women than men within the EU. The acquisition of a science qualification has been demonstrated to have a significant positive impact on the predicted income of an individual throughout their working life.

5. The 2014 Ipsos Mori Public Attitudes to Science Survey reported that 72% of the UK population agree that 'it is important to know about science in my daily life', but 58% also stated that 'scientists put too little effort into informing the public about their work'. Soapbox Science address these issues, bringing relevant, current, cutting edge research to the public, rather than expecting the public to come to them.

5. Soapbox Science has been show to increase the confidence of participants, and in turn has led to opportunities for personal and professional development within universities and learned bodies. This includes outreach, administration and governance, which helps address the gender imbalance in the upper echelons of scientific research and paves the way for a more representative system, reflective of society as a whole.

Similar initiatives
- Alchemist cafe, Ireland (http://www.alchemistcafedublin.com/)
- Junior science café (plus in general), Germany (http://www.juniorsciencecafe.de)

Futurescape City Tours

The Futurescape City Tours aim to engage local community members about technology's impact on their cities. Combining a walking tour, photography, guided deliberation, behind-the-scenes expeditions, and informal conversations with city planners, policymakers, researchers, and civic leaders, FCTs attempt to embed citizens' values into local systems of innovation. Citizens drive the agenda and participate in conversations as active, experienced, and equal contributors. Among several outcomes, the project has enhanced the intrapersonal, political and civic capacities of participants.

Context

One of the primary goals of the National Science Foundation funded Center for Nanotechnology in Society at Arizona State University (CNS-ASU) is to design and test new ways to embed societal values into research and innovation. As technology becomes more complex and pervasive in society, its potential impact on urban environments and citizens' day-to-day lives grows. Ensuring that the general public has the opportunity to understand, respond to, and influence future directions related to innovation is therefore imperative for upholding a truly democratic society. To that end, through an NSF grant, CNS-ASU developed Futurescape City Tours to engage local community members about technology's impact on their cities. They began with a single-city pilot in Phoenix, AZ and, following its success, expanded the program to include five additional cities. The stakeholders that joined the tours included local city planners, community organizers, business leaders, and scientists and engineers from the sponsoring universities.

Background information

Name: Futurescape City Tours

Organizer: Consortium for Science, Policy & Outcomes

When: August 2012 – May 2014

Where: USA, Tempe AZ

Who: Dr. Kathryn de Ridder-Vignone, James Madison University and Arizona State University & Cynthia Selin, Arizona State University

Additional information:

http://cns.asu.edu/fct
http://www.futurescapecitytours.org/

Initiative characteristics

PE category: Public Deliberation

Mechanism: Walking tours (material deliberation), Photography

Main purpose of initiative: Awareness raising, education and capacity building, dialogue/deliberation

Geographical scale: Global

Organizing entity: Academic institution

Target groups: Lay public, stakeholder groups, researchers, public officials, business and industry

H2020 Societal Grand Challenge(s):
- Health, demographic change and wellbeing;
- Europe in a changing world – inclusive, innovative and reflective societies

The project was led by Cynthia Selin, Kathryn de Ridder-Vignone, and Kelly Cambell Rawlings in Tempe, AZ. The research partners and site leaders during the second phase of the project were: Roopali Phadke (Macalester College) in St. Paul, MN; David Tomblin (University of MD) and Mahmud Farooque (CSPO DC) in Washington DC; Thad Miller (Portland State University) in Portland, OR; Gretchen Gano (University of Massachusetts- Amhers) in Springfield, MA; and Kevin Jones (University of Alberta) in Edmonton, Alberta, CA.

Aims and mechanisms

In an effort to create a more inclusive, sustainable, and integrated public engagement experience, researchers at the Center for Nanotechnology in Society at Arizona State University (CNS-ASU) developed Futurescape City Tours (FCTs). Combining a walking tour, photography, guided deliberation, behind-the-scenes expeditions, and informal conversations with city planners, policymakers, researchers, and civic leaders, FCTs attempt to embed citizens' values into local systems of innovation. Citizens drive the agenda and participate in conversations as active, experienced, and equal contributors.

Through the use of these alternative approaches to public engagement, the FCT aim to build capacities among participants to appreciate their role in the trade-offs path dependencies, and choices that shape technologies and their urban landscape.

An FCT consists of three sessions:
1. Orientation: Guided discussion uncovers the concerns and curiosities of participants related to the FCT topic and the future of the city or community.
2. Walking Tour: Based on those concerns and curiosities, participants take a guided walking tour of their city and community. Along the way, they take photographs representing the past, present, and future and they have conversations with local experts and stakeholders. While walking through their urban environments, participants notice and document their city or community with fresh eyes while considering its past, present, and future.
3. Deliberation: Participants use their photos in a guided deliberation about the past, present, and future of their city or community as it relates to the FCT topic.

Facilitated deliberation before and after the tour, as well as informal conversations with researchers, stakeholders, city planners, and officials, encourages all participants to voice their concerns and desires for the future of their communities.

The following are four design principles that heavily shape the methods of the FCT.

A. Capacity Building in a Deliberative Society
Civic capacity building involves the development of the particular intrapersonal, political, and civic skills necessary for participation in public life. The FCT team employed a variety of methods and approaches intended to provide participants with opportunities for capacity building. For example, throughout the three sessions, participants engaged in small and large group deliberations that included opportunities to foster connections among participants, develop communication skills, and practice critical thinking skills. Reflective writing was used develop an understanding of the bigger picture and the interconnections between issues. Formal and informal interactions and exchanges with experts and educational resources as well as recommended outside readings provided participants with an opportunity to increase their subject matter knowledge and to clarify how policy and political decisions are made.

B. Citizen-driven agendas
During FCT our participants meet for three different sessions over the course of a month. During the three-hour introductory session I, participants express their concerns about and interests in the future of their city and the role technologies play in those concerns. As organizers of the FCT, we set the

agenda for Session II based on those concerns and interests. The sites we visited for the all day walking tour, as well as the stakeholders, scientific experts, and corporate representatives we invited to participate in conversation at the different sites, were determined by the participants' interests.

C. The importance of place and materiality and the relevance of multiple timescapes

An important aspect of Session II, the tour, involves the participants documenting their experiences using multi-media. For the tours we rely predominately on photography with some video and audio. We ask participants to find representations of past, present, and future of Phoenix, for example, during the site visits and while en route to and from these locations. Participants are asked, from time to time, to jot down notes about their thoughts and impressions of particular locations or visions of the city. These impressions, particularly the images, are used as a means of an alternative approach to dialog during Session III, the synthesis and wrap up. In addition, the images serve as the basis for a public exhibition. This is open to the public at large and is a means to receive feedback from the greater community on the participants' work.

D. Integration of Stakeholder and Science and Technology Experts

We attempted to choose participants who represent the demographics of the cities, but were limited by those people who self-selected to participate. As part of these selections, we invited "competent outsiders." These individuals described themselves as having leadership roles in their professions or civic life and can serve as gatekeepers of their communities.

In addition, we invited policy stakeholders, scientists from a variety of career stages, and corporate business representatives to participate in our conversations. Our goal was to lessen the privileging of the authority of those with science and technology expertise above the experience and expertise of other participants and to validate the expertise that all citizens possess in relation to their community.

Results

Evaluation of the FCT is on going. Thus far, much work has been done on the role of our design principles (mentioned above) in enhancing different types of capacities of participants. Capacity building is the development of the skills and habits necessary to successfully participate in public life and it requires practice and opportunities to engage. Therefore, we have tried to determine what capacities of participants were built, developed, or enhanced. Thus far we have identified changes in intrapersonal capacities – increased understanding of the interconnections between issues and people, enhanced empathy, and the building of networks and relationships among participants –; political capacities – increased understanding of the ways in which policy and political decisions are made and a change in political efficacy and participants' attitudes towards government –; and civic capacities – enhancement of civic ownership and one's level of knowledge about, and commitment to, a particular place or community.

More concretely, the site partners of each city hosted public exhibitions of the participants' work, sometimes collaborating with artists or other experts in cultural interpretation, and there was an exhibition of all of the image-work made my participations at CSPO in Washington DC in September 2014. At that exhibit and the discussion that followed, program officers and city planners from the US federal government and Washington DC's local government expressed interest in understanding how FCT methods could be incorporated into on going pubic deliberation and planning methods. Finally, the FCT team produced a Guidebook for Practitioners (http://www.futurescapecitytours.org/brochure-1/) that summarizes the methods and provides guidance about how to implement an FCT on different topics and for a variety of audiences. A hard copy is available upon request. We produced a promotional video, which can be found here: http://www.futurescapecitytours.org/video/. The digital exhibition and gallery hosts both the guidebook and the video as well as displays the tours of each city and the visions of the cities' past, present, and future, made my participants. It can be accessed here: http://www.futurescapecitytours.org/

Advantages

The advantages of this project depend largely on the organizers' goals.

Our project aims to address and experiment with methods of public engagement and deliberation that have been identified as proving to be problems with public engagement (like the top-down agendas set by researchers or the lack of incorporation of participants' ways of knowing the world through alternative material forms). From the perspective of a future host of this project the advantages are the following:

1) The topic of the tours can vary: We focused on nanotechnology, sustainability, and the urban environment, but any topic that participants want to engage with that is relevant to them could be examined using our methods.

2) Participants get access to experts and stakeholders in their community, but in a format and orientation that is conversational: Our experts do not give talks, they participate in the tours as partners. They serve as resources, but they are not situated in the conversations as the only voices of authority. Our participants, during the conversations and photography, formulated visions of how their communities are and can be, for better or worse, but were not limited in doing so by expert authorities.

3) Enjoyment and fun: Participants liked to participate. They enjoyed the work they did. They were happy to meet new people, experience their cities in ways they never had before, to document sites that were important to them, and to discuss, reformulate, and consider possibilities. Civic skills are learned through practice. One of the reasons persons take the time to participate is not only to learn something new, to have a new experience, but to enjoy that process. Although they reported being tired after the tour, for example, participants at all cites also reported a feeling of enjoyment, gratitude, and pleasure about getting to participate and discover their city in new ways.

4) Inclusion of multiple epistemologies: Our methodology, but particularly the walking tour, photography, and image-based deliberations integrated moments of personal reflection with group discovery. Our participants do not have to be skilled readers or deliberators to be active

and engaged participates whose knowledge and expertise is valued and valuable to the group.

Obstacles

The primary methodological challenges of the FCT have largely been addressed as we moved from the Pilot in Phoenix to our sites in North America. However, some challenges that future hosts must be aware of include:

1) Participants' technological skills and access to technologies like computers, the internet, and digital cameras.
   The reliance on digital photography challenged some of our groups whose participants were not familiar with computers or cameras or did not personally owned devices.

2) Persons with certain types of physical disabilities
   Our participants were largely self-selecting. However, given that the tour includes waking and moving through and in spaces only available to individuals able to do so with little assistance, our self-selecting pool was exclusive of individuals needing assistance.

3) Facilitation
   Facilitation of the conversations during the "classroom" sessions and during the walking tour is key to the experience of the participants. If organizes are not familiar with facilitations methods or do not have access to volunteers that they can train, the management of the participants becomes difficult and their enjoyment reduces.

4) The extent to which capacity-building took place is ultimately difficult to measure (Rawlings 2012).
   We do know that one-shot events are much less likely to have measurable effects in terms of capacity building. Therefore, it is not a stretch to imagine that individuals living in a space where there are frequent, overlapping, and interconnected opportunities to publicly engage will continue to build their capacity for future efforts (M. Powell & Kleinman, 2008). The FCT emphasized to us the importance of creating an intentional civic infrastructure that maintains a commitment to citizen inclusion and supports multiple opportunities for PEST. The more that

opportunities like FCT are available, the more likely it is that individuals will continue to develop and build and use their intrapersonal, political, and civic skills.

5) Tours are difficult to manage with groups of larger than 15 people.
The time asked of participants as well as the limited numbers organizers could handle made the event more exclusive. In addition, the unwieldy power dynamics that often occur during public deliberations were not entirely disrupted.

6) Difficulty of measuring certain types of outcomes
Although program officers and city planners to whom we have presented this project feel confident of its value, they are wary of utilizing the project for incorporation into policy making decisions because of its lack of quantifiable outcomes. Unlike the EU's VOICES for innovation project focused on Urban Waste, policy makers and museum leaders in the United States are still suspicious of qualitative work that proves difficult to evaluate and incorporate through traditionally trusted methods.

Innovative dimensions

The most innovative dimensions of our project were its reliance on citizen set agenda to create a walking tour, the use of photography and walking as a way of looking and realizing elements of the past, present, and future that are important, and the incorporation of those resulting photographs as the primary means through which deliberation occurred. Rather than sitting around a table and debating a bunch of articles the participants were required to read about the implications of emerging technologies for the city, our participants decided what was important to them to discuss and do, they met experts and stakeholders from their community who were focused on issues they cared about, they visited places to which they would not normally have access and they engaged in iterative work which allowed them to incorporate multiple ways of knowing the world into their evaluations and observations of their communities and their futures.

Orientation towards societal challenges

- Health, demographic change and wellbeing
- Food security, sustainable agriculture and forestry, marine and maritime and inland water research, and the Bioeconomy
- Secure, clean and efficient energy
- Smart, green and integrated transport
- Climate action, environment, resource efficiency and raw materials
- Europe in a changing world – inclusive, innovative and reflective societies
- Secure societies – protecting freedom and security of Europe and its citizens

The Futurescape City tours address challenges 1 through 6. Although the researchers and facilitators broadly framed the project around the role of emerging technologies, like nanotechnologies, in the city, the agenda of the tour was determined by participants' expressed concerns for and curiosities about the future of their city. In each city, and in both Phoenix iterations, these concerns and curiosities varied slightly in expression, but overall every one of the Horizon 2020 societal concerns were shared by our participants. Additionally, #6 was one of the goals of the designers of the project that was achieved through practices of alternative methodologies for public engagement and deliberations.

Similar initiatives
- Decision Theater, ASU, US (Davies et al. (2012) Citizen engagement and urban change: Three case studies of material deliberation. Cities 29(6), pp. 353-354
- See DEEPEN Project in this catalogue

CIVISTI
– Citizen Visions on Science, Technology and Innovation

CIVISTI aimed to produce a list of new and emerging issues for European S&T, produce a set of policy options of relevance to future European framework programmes, and base these products upon a novel and cost-effective process of citizen participation in seven member states, supported by the analytical capacity of experts and stakeholders. CIVISTI contributed to the expansion of the European foresight capacity by adding to the methodology and to the foresight competences in Europe. Through CIVISTI the aspect of citizen consultation attracted and attracts attention from different scientific areas.

Context

The CIVISTI project was a research project, supported by DG Research and Innovation of the European Commission under the call Blue Sky Research on Emerging Issues Affecting European S&T, Socio-economic Sciences and Humanities programme of FP7.

The call aimed to identify emerging or hardly visible issues, which could have an important role in shaping the European research system in the future. Another aim for the call was to provide strategic intelligence and input for planning the 8th Framework Programme. The results of CIVISTI were directly related to the objectives of the Blue Sky Research call. However, the CIVISTI method developed in the project is generic and may be framed and scaled for the identification of research & innovation needs/demands in any program development setting.

Background information

Name: CIVISTI- Citizen Visions on Science, Technology and Innovation

Organizer: Danish Board of Technology

When: September 2008 – February 2011

Where: Various EU countries – Denmark, Finland, Belgium, Malta, Bulgaria, Hungary and Austria

Who: Lars Klüver, Danish Board of Technology

Additional information: http://www.civisti.org

Initiative characteristics

PE category: Public Deliberation

Mechanism: Citizen Panel (+ stakeholder panel)

Main purpose of initiative: Consultation, dialogue/deliberation

Geographical scale: Europe

Organizing entity: Non-profit trading foundation.

Target groups: Lay publics, stakeholder groups, public officials

H2020 Societal Grand Challenge(s): All seven

The CIVISTI project involved seven partner organisations from smaller countries across EU. The participating organisations included public technology assessment institutes, research institutes in the field of consumer, innovation policy and market research, and a governmental S&T advisory body.

The engagement activities consisted of two citizen consultations with an expert and stakeholder workshop in between. The citizens' consultations were carried out with national panels of about 25 citizens in each of the seven participating countries. The citizens were selected from random or quasi-random samples using the criteria of gender, age, education, occupation and residence. The expert and stakeholder panel, assembled to assist the citizen consultations, consisted of 18 recognised national and European experts, stakeholders and policy makers, including scientists, policy analysts and representatives of governmental bodies, involved in research policy making and implementation. The participants came from the following countries: Austria, Belgium, Bulgaria, Denmark, France, Germany, Hungary, Switzerland and United Kingdom.

Aims and mechanisms

CIVISTI had the challenging task of 1) producing a list of new and emerging issues for European S&T, 2) producing a set of policy options of relevance to future European framework programmes, and 3) base these products upon a novel process of citizen participation in seven member states, supported by the analytical capacity of experts and stakeholders.

The CIVISTI project was based upon the rationale that the process of defining research agendas relevant to the societal needs and concerns could in many respects gain from consultation with citizens. The common understanding of the CIVISTI partners was that citizens are the carriers of the societal concerns and expectations to the future and with the right facilitating methods, such concerns and expectations can be collected and transformed into relevant research agendas. In CIVISTI citizens developed visions for the future based on their hopes and fears. Experts translated these into research priorities and policy recommendation. Finally, the citizens met again to validate and prioritize the translated visions.

Seven Citizen Panels of 25 people were established, one in each of the CIVISTI partner countries (Austria, Belgium, Bulgaria, Denmark, Finland, Hungary and Malta). Citizens were recruited through different media, e.g., from person registers or through newspaper announcements. The people in the panels were not representative for each country, but they were selected to ensure diversity in the panel and there were basic criteria for the selection, such as gender, age, education and occupation.

The CIVISTI methodology consisted of three overall steps:

First citizens around Europe were asked about their visions for the future. Each Citizen Panel made a long-term view into the needs, wishes, concerns and challenges to the future through a process of deliberation, informed by introduction material and expert and stakeholder input. This was done in 7 national citizen consultation weekends in May-June 2009. Accommodation, reimbursement of travel costs, food and refreshments were offered citizens for participating in the Citizen Panel. The result of this process was 69 visions for the future.

Secondly experts and stakeholders analysed the citizens' visions and transformed them into research agendas and policy options for European research in a two-day expert- and stakeholder workshop in June 2010. The framework for extracting new S&T policy options from citizen visions practically was inspired by Kingdon's (Kingdon 1995) *streams model* of policy agenda setting, which is a widely applied approach in policy analysis. The result of the expert- and stakeholder workshop was a list of recommendations for research agendas and policy options derived from the citizens' visions.

These results were given back to the citizens in the **third** step of the process for the citizens to validate and prioritise the new S&T agendas and policy options before the results were presented to the relevant policy makers at a Policy Workshop in January 2011.

Results

The outcome of the CIVISTI project was a list of new and emerging issues for European S&T and a set of policy recommendations to future European framework programmes, which was presented at the CIVISTI policy workshop held on the 24th of January 2011, hosted by the Flemish Parliament. Around 50 policy makers and researchers attended the workshop. During the first session, the CIVISTI project leaders presented the CIVISTI methodology and results. In between both presentations, a Flemish citizen testified how he experienced participating in the CIVISTI project. In the second session, two guests from industry and participation research and the scientific advisory panel of the CIVISTI project shared their reflections on the CIVISTI concept with the public. Both sessions were followed by a small debate.

The following publications were also made:

1. Submission to the 9th Nordic Environmental Social Science Conference (NESS) – Knowledge, Learning and action for sustainability, London, UK, 10–12 June 2009. Working group 9: Knowledge technologies and changing institutions.
2. Paper for the International Conference *Towards Knowledge Democracy, Consequences for Science, Politics and Media*, Leiden, Netherlands, 25–27 August 2009.
3. CIVISTI in the Blue Sky Foresight Newsletter of November 2009
4. European Policy Brief

A formal evaluation report was carried out by Centre for Social Innovation (ZSI), Vienna, Austria. The report can be found alongside with the CIVISTI project report and other publications on the CIVISTI project webpage www.civisti.org.

Regarding impact it is unknown to which extend the results influences Horizon 2020 – there are certainly calls which strongly overlap with the citizens' prioritized research needs, but it is not possible to document how much CIVISTI was part of defining these calls. It was from the offset a goal

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among the consortium partners to implement the method in new projects and to keep experimenting with the methodology. Currently, the method is being used in a downscaled and "fast track" format in the EU funded project CASI (Public Participation in Developing a Framework for Assessment and Management of Sustainable Innovation). In this project the method is used to provide research priorities for the specific area of sustainable innovation. Similarly, the Institute of Technology Assessment, Austrian Academy of Sciences, developed the CIVISTI method into "CIVISTI – The Leben 2050 project." Here focus was on developing citizens' visions for more independent aging into recommendations for the city of Vienna. In conclusion, new projects are exploring and expanding the methodology by adapting and implementing it in new contexts.

Advantages

As stated by the external evaluation report the CIVISTI project had a high quality of coordination and organization with joint efforts by all participating partners. Participants from citizens' consultations and the expert-stakeholder workshop gave positive feedback. In particular the participating citizens reported a very high satisfaction with the organisation. An important element of this quality was the clear dedication of the consortium to a number of well-defined objectives: Ensuring an open thematic approach regarding the visions, ensuring a broad and balanced participation (different age groups, male/female, different levels of educational attainment, different occupations, employed/unemployed, etc.), ensuring that citizens can freely and equally express their opinions, ensuring that these opinions are acknowledged without being "censored" or "standardised" and ensuring that the final outcome is validated by the citizens themselves.

The high level of participant satisfaction did however not mean that the citizens' consultations and the workshop were organised in order to please participants: The national organisers implemented a very strict and demanding working programme, where participants had to get very involved and had to provide significant input, while receiving all the support they needed. This strict and demanding framework was necessary to achieve an output with a certain quality. CIVISTI used a well-designed methodological approach, which guided the national implementation. It could not be implemented without some necessary improvisation, but the overall level of standardization was high.

Obstacles

CIVISTI was an experimental project. From the beginning a high risk was taken, first of all because this kind of methodology had never been tried before. And second because this new, innovative and experimental process and method was developed during the project, so to say, CIVISTI also involved "learning-by-doing". Overall the CIVISTI project was a success measured on the positive feedback from the participating citizens, stakeholders and the people attending the final policy workshop. However two elements in the methodology posed a special challenge:

Firstly, the transformation of visions to research priorities and policy recommendations was a challenge to the experts and stakeholders on the expert and stakeholder workshop. Multi-dimensionality in the visions made the elaboration of recommendations more difficult and probably made several of them rather unspecific. Furthermore, the broad range of themes could not be completely covered by the experts. Some experts themselves voiced the self-criticism that they were probably not the right persons to comment on specific visions. And some experts had to struggle with the generality or unfeasibility of the visions in their attempt to formulate research guidelines while at the same time feeling obliged to acknowledge all the citizens' visions. The recommendations remained in some instances quite general and could not draw research trajectories or implementation processes in much detail. However, the experts and stakeholders still managed to produce a list of relevant policy recommendations. A note made for future projects were to narrow the focus in order to avoid a high degree of multi-dimensionality. As mentioned above Leben2050 and CASI are two examples of the use of a more narrow focus.

Secondly, there was the issue of high drop-out of participants between first and second citizen consultation. A comfortable environment, a good participation experience and a good organisation did not seem to be enough to secure ongoing participation of citizens. A problem might have been a quite long time interval between CIVISTI consultations. Citizens had to wait for more than a year for the second round while only one workshop had to be arranged in between. During the CIVISTI policy workshop it was discussed that future projects using the CIVISTI methodology could use a "fast-track" version. This has been implemented in the Leben2050 and the CASI projects.

Innovative dimensions

CIVISTI contributed to the expansion of the European foresight capacity by adding to the methodology and to the foresight competences in Europe. Through CIVISTI the aspect of citizen consultation attracted and attracts attention from scientific areas, which have not yet been generally aware of the developments in foresight – such as policy sciences, study of democracy, ethics and philosophy. A new concept for citizen participation in long-term foresight was established in CIVISTI.

Most forward looking activities have taken their starting point in what could be called the supply side, understood as technological development and research disciplines. There are also previous forward looking activities considering as well the supply side as the demand side, understood as needs and trends of society and societal development. CIVISTI is unique in strongly taking the starting point in the demand side. The strong focus on citizens' visions for the future of Europe makes up a new way of doing forward looking.

This innovative methodological approach is characterised by being very cost-effective – as compared to existing experience of cross-European citizen participation and known costs of other foresight approaches. Potentially, the new method makes it possible to organise citizen consultations across all member states in an economic and efficient way.

Orientation towards societal challenges

- Health, demographic change and wellbeing
- Food security, sustainable agriculture and forestry, marine and maritime and inland water research, and the Bioeconomy
- Secure, clean and efficient energy
- Smart, green and integrated transport
- Climate action, environment, resource efficiency and raw materials
- Europe in a changing world – inclusive, innovative and reflective societies
- Secure societies – protecting freedom and security of Europe and its citizens

In the CIVISTI project, citizens produced 69 visions for the future of Europe in the first step of the process. These visions were characterised by being holistic, multi thematic, interdisciplinary and that they spread across multiple domains of society, and therefore the issues of the grand societal challenges are somehow all reflected in the pool of visions from the citizens. The most extensively discussed topics among citizens in CIVISTI were: Healthcare and medical services, Education and learning, ICT, automation and artificial intelligence, Legislation; quality of life and life style, Employment and new modes of work, Energy.

An example of a vision (short description) from Austria on education and inclusiveness:

"CIVISTI vision 6: Multicultural and integrative education for more tolerance
In order to achieve more understanding and tolerance and to reduce the fear of the foreign and new, state-funded kindergartens and schools as well as special training programmes enable children and teenagers from different cultures and handicapped ones to grow up and to learn together."

An example of a vision (short description) from Hungary on energy and raw materials:

"CIVISTI vision 52: Renewable beauty and utility
Fossil energy sources are replaced with renewable energies. Raw materials are also renewable and waste is reused as a new value or ingredient for another thing. Companies and households operate in an environmentally friendly way because of prevention, education, and tax reduction."

An example of a vision (short description) from Malta on inclusive, innovative and reflective societies:

"CIVISTI vision 65: Globally Oriented Diffused Information City (GODIS)
Having a system in which different organisations in the same field of work can pool information, work together, and help each other in problems they might be unable to solve alone. It will also publish their results and studies for the general public."

There was large diversity in the recommendations made by experts as well. Many of the recommendations related to societal challenges of: Ageing society; sustainable energy production and transport; environment and climate; and supply and quality of water and food.

The CIVISTI methodology itself can be moderated into a specific focus. The CASI project employs the CIVISTI methodology within the focus of the 5th grand challenge of climate action, environment, resource efficiency and raw materials.

> **Similar initiatives**
> - Citizens' Panel on Edmonton's Energy and Climate Challenges, 2012, Canada (http://participedia.net/en/cases/citizens-panel-edmonton-s-energy-climate-challenges)
> - Citizen panel about climate change, '180°', 2008-2009, Luxembourg (MASIS report Luxembourg p. 12-13, https://dipot.ulb.ac.be/dspace/bitstream/2013/77566/1/MASIS_LUXEMBOURG_report.pdf)

Empowering Citizen Voices in the Planning for Rebuilding New Orleans

This project emerged after the city of New Orleans was devastated by Hurricane Katrina, and initial rebuilding plans failed to secure citizen support or bring-in desperately-needed federal funds. The project aimed to bring citizens and decision makers together in a deliberative process that would result in an actionable plan. Use of AmericaSpeaks' 21st Century Town Meeting methodology directly engaged approximately 4,500 people in determining priorities for rebuilding New Orleans. The outcome was a comprehensive rebuilding plan with clear directions for the future that was approved by all local and state authorities

Context

In August, 2005, New Orleans was devastated by Hurricane Katrina and subsequent flooding. Initial efforts to plan for rebuilding did not meaningfully involve citizens, were biased by race and class, and created significant public resistance. In the chaos, the federal government withheld rebuilding funds, further stalling recovery, intensifying the politics, and entrenching people's suffering.

By summer 2006, the Greater New Orleans Foundation and the Community Support Organization – a new governance structure comprised of citizens and liaisons from the Mayor's Office, City Council, and City Planning Commission – embarked on a new course. The group invited the nonprofit organization AmericaSpeaks to use its proven model to convene a large, demographically representative group of New Orleanians in Community Congresses to reach agreement on recovery plans.

Background information

Name: Empowering Citizen Voices in the Planning for Rebuilding New Orleans

Organizer: AmericaSpeaks

When: January 2006 – December 2007

Where: USA - Primarily New Orleans, LA

Who: Carolyn Lukensmeyer, National Institute for Civil Discourse

Additional information: http://nolaplans.com/unop/

Initiative characteristics

PE category: Public Deliberation

Mechanism: 21st Century Town Meeting

Main purpose of initiative: Dialogue/deliberation, community building, co-governance

Geographical scale: Local/urban

Organizing entity: Non-profit organisation

Target groups: Lay publics, public officials

H2020 Societal Grand Challenge(s):
- Health, demographic change and wellbeing;
- Climate action, environment, resource efficiency and raw material;
- Europe in a changing world – inclusive, innovative and reflective societies

These roughly 4,500 citizens – living either in New Orleans or the diaspora centers of Houston, Dallas, Atlanta and Baton Rouge – were the most important stakeholders in this work. Without a viable, supported rebuilding plan, there would be no future for their city.

Aims and mechanisms

With the post-disaster rebuilding process in New Orleans thoroughly stalled, the initiative's immediate objective was to break the political logjam preventing vital funds from being released to the city. This would require plans and investment priorities that were determined by the collective voices of New Orleanians (present and dispersed), and endorsed by city and state officials.

The initiative also sought to rebuild the sense of community that had been torn apart by the storm and its aftermath – to contribute to healing, create hope, and energize the citizenry to continue fighting for the survival of their city.

Finally, the initiative sought to institutionalize a new level of government accountability and active citizen participation in the operations of New Orleans. These two key components of a high-functioning democracy were deeply damaged – or non-existent – when Katrina hit, yet they would be critical to the enormous rebuilding challenges that lay ahead.

The development of the Unified New Orleans Plan relied on a sequence of large-scale engagements. In the first, 2,500 citizens collectively agreed on specific planning recommendations. In the second, 1,300 citizens reviewed the report to ensure fidelity to their earlier deliberations. In the third, nearly 700 civil servants laid the groundwork for implementation. Altogether, roughly 4,500 people were directly engaged in determining the priorities for rebuilding New Orleans.

To achieve this level of participation, in the six weeks leading up to the first deliberation, a massive, multi-faceted outreach campaign involving hundreds of local organizations worked to enrol a participant body that replicated the pre-hurricane demographics of the city, in race, gender, age and socio-economic status. Outreach teams worked in New Orleans as well as in the four major diaspora cities, where citizens would participate live via satellite link. Simultaneous webcasts were set up so New Orleanians displaced to other cities could watch the live broadcast and contribute comments via email.

While participant enrolment proceeded, the key elected officials, decision-makers and major stakeholders that were part of the recovery effort were also being actively engaged. Their understanding, buy-in and participation would be essential to the initiative's credibility – in particular they had to publicly agree, in advance, to honor the outcomes of citizens' work.

America*Speaks*' 21st Century Town Meeting methodology was used in all three events. The model combines facilitated, face-to-face dialogue with technology (networked computers, keypad voting, centralized theming of table conversations and instant reporting) so that traditional round-table discussion can lead to large-group decision-making. Accessible data and educational material enabled participants to quickly understand and make choices about complex planning issues such as how to incentivize homeowners to pursue safe rebuilding plans.

Because of the trauma that precipitated this work – and New Orleanians' intense distrust of both private and government planning processes – an absolutely critical component of the engagement was the creation of safe space for dialogue. To do this, familiar symbols and energy expressive of participants' common experiences filled the room: the poetry, images, music, and food of New Orleans. Skilled facilitators created a climate of emotional safety at each table, and local grief counsellors and government constituency services representatives were on hand. Finally, the agenda included time for a publicly shared honoring of those who had died, enabling everyone to carry some of the emotions such that all could join in the planning work. (396)

Results

The large-scale citizen engagement work in New Orleans achieved its objectives and had significant impact on the city, as well as on the field of citizen engagement itself.

For New Orleans:

- A comprehensive rebuilding plan with clear priorities for the future was approved by all local and state authorities. More than $400 million in state funds and billions of federal dollars were released to the city.
- A broad swath of local decision-makers – many of whom had been cautious or openly disinterested at the outset – got deeply involved. They agreed to be held accountable for follow-up actions and they remained loyal to the plan months later, even when facing organized opposition.
- By bringing citizens from across the diaspora together with those still living in New Orleans, the work helped restore a sense of connection, hope and community.
- Key regulations of local governance changed. Per the plan, antiquated zoning laws and master plans were updated. In addition, the City Council and several city agencies codified citizen participation processes as an on-going part of local governance.
- Citizens' participation in the initiative led to increased activism on critical local issues, in particular on the fate of displaced residents living in federal trailers and the redevelopment of major public housing projects.

The work also had a direct impact on the citizen engagement field:

- It demonstrated that large-scale, demographically representative participation can be achieved, even under "hardest case" circumstances. In New Orleans, most of the target population was living in post-disaster crisis mode in and outside the city. They were openly sceptical of planning efforts, and angry with leaders and all public institutions.
- It proved that citizens can be successfully engaged on extraordinarily complex planning and financing issues.
- It showed that geographical distances need not limit citizen engagement on issues of shared concern.
- It demonstrated that citizens will remain committed to the results of their deliberative efforts and take active steps to ensure their implementation.

Advantages

The 21st Century Town Meeting model of citizen engagement has been in practice for more than twenty years. It has been used across five continents, and in over 100 projects involving more than 200,000 people. On this journey, it has proven highly adaptable to many cultures and to many contexts – from regional development, to city budgeting, to national policymaking. It has had an impact on issues ranging from health care reform to sustainable economic development; from debt and deficit reduction to the policy implications of neuroscience.

One of the principal advantages of the model is the uniquely large scale at which it operates – often engaging thousands at a time, and capable of directly engaging tens of thousands. The 21st Century Town Meeting capitalizes on the aggregate power of large numbers of representative citizen voices to influence decision-makers on the toughest issues. The method creates public will and links it to political will to help leaders make decisions that reflect the body politic and that will hold.

The scale of the work, combined with the active participation of decision-makers, makes it of high interest to the media. The coverage that results further incentivizes decision-makers to honor the commitments they make during the engagement process. It also increases the broader public's knowledge about the issues at hand.

The model has proven particularly apt when there are highly contentious or "stuck issues" on the table. A 21st Century Town Meeting creates a level playing field for all participants and follows a design that intentionally builds common ground by using values-based questions before moving to tough trade-off discussions that lead to the development of shared views.

Finally, the intensive and sophisticated outreach methods intrinsic to the model bring all voices in the affected communities – including the most marginalized – into the process

Obstacles

Robust public engagement work linked to live decision-making opportunities consistently faces some predictable obstacles. Two in particular stand out in this initiative. First, special interests almost always seek to maintain and increase their power and/or to achieve predefined and preferred outcomes. Second, the road from developing recommendations to seeing them implemented is often long and complicated, and an engagement's results can be derailed along the way.

In New Orleans, these obstacles were manifest. The Unified Plan was created by citizens under the auspices of a temporary governance structure, but it had to proceed through multiple levels of local and state government review to be certified and implemented. It was at this juncture that developers, affluent citizens, and other groups emerged to challenge the work and protect and enhance their interests. When the City Planning Commission announced public hearings on the Unified Plan, entrenched interests launched harsh, politicized and racially-charged criticisms. However, in response, hundreds of Community Congress participants mobilized, attended the hearings and provided testimony in support of the Plan. This strong public showing amplified by the media made it impossible for the Commission to delay moving forward or to change the priorities agreed to in the Unified Plan

To ensure the plan would be embedded into administrative processes and programs of the city, the initiative took a key step. Two months after the large citizens' convenings, nearly 700 civil servants (across agencies and managerial levels) were engaged in a similarly formatted event – to build their understanding about the details of the plan, and to secure their commitment to implementing the outcomes. The engagement was a cathartic and empowering experience for city employees who had been long-beleaguered, both in the pre-Katrina years as well as in the grueling aftermath when needs were spiking as systems shut down. The civil servants' engagement re-energized this corps for the work ahead, ultimately helping to ensure its successful implementation

Innovative dimensions

The 21st Century Town meeting was strategically developed to deepen the relationship between the public and decision-makers by establishing a means for them to connect authentically, and in a timely way, on issues of immediate significance. Recognizing the importance of both scale and in-depth, inter-personal discussions, the model harnesses technology to enable participants to move between small group discussions and large group decision-making. The back and forth can occur as often as needed to make collective decisions within a single day. This model of simultaneous small-group/large-group engagement was a significant innovation when it was introduced and has now been adapted by numerous participation methods.

Also innovative is the model's fidelity to the concept that "all voices must be in the room." Understanding that one key to influencing decision-makers is the participation of a large AND demographically representative group of citizens, the model uses high-intensity outreach methods, closely monitoring demographic targets and making strategic adjustments to ensure they are met.

Another innovation has been developing the ability to hold multi-site, linked deliberations in real time. Building on this expanded concept of "face-to-face" deliberation, the model also uses Internet distribution of discussion materials and webinar trainings for facilitators, to enable independently-formed groups of citizens to participate from libraries or other public spaces in their communities, or even on an individual basis from their homes. Their input can be fed into the central discussion in real time or integrated afterwards. In this initiative, the four major diaspora locations were linked live to the discussion in New Orleans, while "distributed conversations" took place in ten additional cities. Advances in Internet platforms over the last ten years have greatly diminished the cost of doing such distributed work. In New Orleans, expensive satellite broadcasts were required to link the participating sites. Today, webcasting can be used for this purpose at very low cost.

Finally, in this initiative the intensive outreach and community organizing that was used to enroll participants was deliberately sustained after the large-scale events. This is highly unusual in citizen engagement methodologies. For more than four years, a group of inspired citizens and community organizations – supported by America*Speaks* – actively fought housing policy that was keeping them trapped in government trailers and preventing them from rebuilding their lives. By raising awareness about the disastrous impact of prematurely ending supports, the "Rebuilding Lives Coalition" helped secure extensions for key programs and commitments for millions of dollars in emergency rental assistance and gap financing for struggling homeowners

Orientation towards societal challenges

- Health, demographic change and wellbeing
- Food security, sustainable agriculture and forestry, marine and maritime and inland water research, and the Bioeconomy
- Secure, clean and efficient energy
- Smart, green and integrated transport
- Climate action, environment, resource efficiency and raw materials
- Europe in a changing world – inclusive, innovative and reflective societies
- Secure societies – protecting freedom and security of Europe and its citizens

The seven Horizon 2020 challenges are specific issues, yet embedded in all of them are two significant realities. First, these challenges are all multi-jurisdictional and cross-sector in nature – something few governance structures around the world today are equipped to deal with effectively. Second, they exist in a world in which people are crying out for a larger role in the decisions that impact their lives. While advances in information technology are spurring that desire and the ability to mobilize dramatic change processes; in most places the pathways and structures that keep collective voices productively connected to power do not exist.

The initiative described here demonstrated that these broader challenges can, indeed, be addressed – that we need not retreat from them, or retrench into the "safety" of less participatory government. In New Orleans, a temporary, cross-jurisdictional governance structure was created to oversee the work that the traditional structures had been unable to achieve. Expectations and mechanisms for ongoing engagement were eventually embedded into the city's operations. The massive trauma and disruption inflicted by Hurricane Katrina – not unlike the significant disruptive events we are seeing around the globe with increasing frequency – was the impetus for re-shaping the role of New Orleanians in the governance of their city.

Similar initiatives
- See The creation and composition of Law No. 69/07 of the Tuscany Region and Imagine Jersey 2035 in this catalogue

Consensus Conference on Future Energy Supply

The Consensus Conference on Future Energy Supply aimed to formulate recommendations for future energy supply through a balanced dialogue between citizens. The participants of the conference were carefully selected to ensure a broad representation of various groups in the society. During the conference the citizens were accompanied by experts, who could answer questions raised by the participants and facilitate the panel discussions. The project resulted in a citizen report which featured recommendations on future action in relation to energy supply.

Context

In the research project "Debating science! "a consensus conference was held in January and February 2009 in Essen about *"The future energy supply in Germany?"*. During the three weekends of the conference the participants were permanently accompanied by two experts (Associated experts). On the last weekend – at the actual consensus conference – eleven other experts were invited to the discussion.

The participants of the Citizens' Consultations were citizens of all ages and levels of education. A representative cross-section of the population however was not possible due to the small number of participants. The goal was rather that the composition of participants as much as possible reflected the diversity of the society.

Background information

Name: Consensus Conference on future energy supply

Organizer: Wissenschaft im Dialog gGmbH

When: January 2010 – February 2010

Where: Essen, Germany

Who: Katja Machill, Wissenschaft im Dialog gGmbH

Additional information:
http://www.wissenschaft-debattieren.de/konsensuskonferenz.html

Initiative characteristics

PE category: Public Deliberation

Mechanism: Consensus Conference

Main purpose of initiative: Dialogue/deliberation

Geographical scale: Local/urban

Organizing entity: Non-profit limited liability company

Target groups: Lay publics

H2020 Societal Grand Challenge(s):
- Secure, clean and efficient energy;
- Climate action, environment, resource efficiency and raw materials

Aims and mechanisms

The participants using scientific input and discussions with experts carefully considered and formulated different recommendations for the future energy supply through a balanced dialogue. The process was deliberately designed in analogy to the functioning of jurors in a trial. Citizens should be unbiased, independent of specific interest groups and on the basis of their life-world knowledge evaluate science-based options and give recommendations on these.

The first consensus conference dealt primarily with controversial technologies; focus was mainly on genetic engineering applications. The consensus conferences now cover a variety of topics, which are all based on the principle that unbiased laymen through deliberation deliver appropriate recommendations to key design challenges in the society

Recruiting: To gain the broadest possible representation of participants, citizens were addressed by newspaper advertisement or selected random and contacted by telephone. If citizens had interest in the event it was possible to register online at a website. From the pool of prospective participants selection were made to achieve the widest possible distribution with respect to age, gender, education and profession.

Preparation materials: Participants received in advance background materials that gave them a first overview of the topic. The documents consisted of articles from the press, future scenarios, editorial texts and links to further articles on the Internet. This was done to give orientation regarding the subject on hand and arouse curiosity.

Procedure: Before the actual consensus conference began two preparatory weekends were held, in which participants gained a thematic basis. During the three weekends of the conference the participants were permanently accompanied by two experts (Associated experts).

Contact scientists: The consensus conference experts were involved in different aspects during the conference.

a) Associated experts

Two experts were present during the three weekends of the conference and were regularly in contact with the participants. It was possible for the participants at any time during their discussions to consult the experts to answer unresolved technical issues.

b) Introductory lecture and panel discussion

During the first weekend experts were brought in to the conference to offer technical input. In an introductory lecture, participants received an overview of different aspects and facets of the topic. The following panel discussion made the differences and conflicts within the topic clear. The composition of the expert should ensure that essential aspects of the subject would be expertly covered. They either came from different disciplines or represented divergent positions.

c) Experts in the expert hearings

During the last weekend the participants asked prepared questions to experts, who were part of four expert hearings. In contrast to the experts accompanying the participants they included specialists on various aspects of the topic. The experts were selected on the second weekend so the participants had time and sufficient information needed to prepare the questions. The experts received the questions in advance so that they could prepare for the answer.

Results

The result of the consensus conference was a citizen report regarding the topic; it was written by the participants with their own words. The citizens' report included relevant aspects of the discussion that had taken place during the conference to reflect the diversity of the discussion. The report also featured recommendations on further action regarding the topic. The participants wrote the report in consensus.

The topic of the format was "*The future energy supply in Germany*" and was examined using the consensus conference, which was held in Essen in January and February 2010. Note: The full version of the results is given in final report, pp 70-74. (http://www.wissenschaft-im-dialog.de/fileadmin/user_upload/Projekte/Wissenschaft_debattieren/Dokumente/Abschlussbericht_Wissenschaft_debattiert-Finalweb.pdf)

Learning:

The clear majority 84% of the 19 participants interviewed claimed to have learned something by participating in the consensus conference. The information flow of the format is very intense.

Ruling:

In the evaluation of the consensus conference participants expressed that the dialogue with the experts were important in relation to being able to rule on a topic. In particular the associated experts were important for the participants in relation to understanding meta-knowledge such as the interpretation and quality of scientific results as well as data and arguments regarding a particular question.

Interest:

The participants of the conference clearly felt better informed after the event. They stated that their interest for the topic had increased after their participation in the project.

Openness towards science:

Regarding the question of openness towards science a clear majority of the participants expressed a greater desire for involvement in the science of the topic. The citizens also felt that scientists should do more to include the opinion of citizens in their research.

Long-term action:

About 2% of the twelve respondents in the follow-up interview confirm that they have changed their behaviour in everyday life. Half of them said they were more involved in social issues, such as energy supply.

Advantages

Success Factors

Participation of the participants:

The opportunities for participations to influence the different process of the event are an important factor for success of the format. The openness of the moderators towards the wishes of the participants is particularly important in regards to topic. It was very important that the event was independent of external influences and that it was insured that no business enterprises were behind the event. The essence of the project is participants with conscious and a critical approach. The advantage of the project was that the participants had influence and affected the process of the project several times.

The participants in the consensus conference in Essen had various requirements in relation to the final report, that it in addition to the national level also should address the local perspective – this was taken up and implemented by the moderator.

Furthermore the participants reviewed interim results, which were summarized by organizers, and even took over responsibility for the documentation of intermediate results.

During the project the moderator emphasized several times that the participants were free in how they wanted to deal with the provided information, including information from the expert contacts.

Professional moderation:

The moderator had a central role in structuring the event. This role can be filled out successfully only by professional facilitators with extensive professional experience. In the successful implementation of the format the moderator plays a crucial role.

– Broad-based participation of experts

One criticism was that a central aspect of the topic was not covered by an expert and therefore unanswered questions remained on this aspect of the topic. Another criticism concerned the selection of experts. One participant would have preferred more dissention in the composition of the experts.

During the preparation of the consensus conference more time should be used to establish an expert panel that reflects a wide variety of opinions. This is true not only in terms of technical expertise, but also with scientific knowledge and technology assessments. The goal of the conference was to achieve diversity within the experts and for example select to experts that on the basis of scientific results would reach different conclusions. In practice this goal is often difficult to achieve and it is a challenge to attract a sufficient number of experts to participate in the event.

Value of the vision:

Overall, the two reviewers of the citizen report on the consensus conference reported a higher quality than regular citizens' conferences. Particular emphasis was on the correctness, foundation and logical consistency of the consensus report. Nevertheless the recommendations were criticised for being "already broad socio-political internalized", for example, already well-known lines of conflict. The texts were originally only to a small extent and contained little new. The Citizens' Consultations were rated better in terms of quality and creativity. Obviously, the consensus conference is suitable for more differentiated judgments on the basis of informed preferences (informed consent). In contrast to originality and innovation. More originality could ultimately be won if a greater range of scientific and technological disciplines were included in the selection of experts. Especially representatives of philosophical or social sciences or technology experts could provide important impulses.

Obstacles

Confer with previously section.

Innovative dimensions

The project to use consensus conference as a format for communicating science is a new approach.

Orientation towards societal challenges

- Health, demographic change and wellbeing
- Food security, sustainable agriculture and forestry, marine and maritime and inland water research, and the Bioeconomy
- Secure, clean and efficient energy
- Smart, green and integrated transport
- Climate action, environment, resource efficiency and raw materials
- Europe in a changing world – inclusive, innovative and reflective societies
- Secure societies – protecting freedom and security of Europe and its citizens

Similar initiatives

- The National Citizens' Technology Forum (NCTF) on nanotechnology, 2008 US (A. Anderson, Ashley and Jason Delborne and Daniel Lee Kleinman (2013): Information beyond the forum: Motivations, strategies, and impacts of citizen participants seeking information during a consensus conference. Public Understanding of Science 22(8), p. 5

Peloton

Demos Helsinki is the Nordic countries' leading think tank. In 2009, it established the offshoot Peloton Club, a peer-incubator for energy smart start-up companies. The idea behind Peloton has since evolved into a way of thinking. As a movement, Peloton seeks to implement innovative new ways for citizens to participate in the co-creation of new products and services. This has been possible through a model for facilitated co-creation between citizens and gatekeepers such as product manufacturers and service providers. The inclusion and selection of citizens combined with an in-depth identification of gatekeepers has been a key factor in the success of Peloton.

Context

Our initial rationale for Peloton was to motivate people and organizations to smarter resource usage. We wanted to create an effort that is complementary to legislation and regulation, something that would engage citizens more directly and enable them to make smarter consumer choices. We wanted to do this by tapping into the growing trend of product/service co-creation and bring together businesses, organizations, consumers and other stakeholders.

The project was initially funded by the Finnish innovation fund SITRA and since then it has grown into a way of thinking. We´ve since received funding from multiple sources for different Peloton projects.

Over the years Peloton has engaged multiple Finnish multinational companies including the hardware retail store chain Rautakesko, food company Fazer and environmental product manufacturer Biolan. We´ve organized dozens of workshops and club events and engaged thousands of citizens in co-creation efforts. Our citizen participants include festival guests, club event guests, environmental organization members and neighbourhood

Background information

Name: Peloton

Organizer: Demos Helsinki

When: September 2009 – Ongoing

Where: Finland & Sweden

Who: Maria Ritola, Demos Helsinki

Additional information: http://www.demoshelsinki.fi/wp-content/uploads/2014/11/Smartup-Manifesto-Demos-Helsinki.pdf

Initiative characteristics

PE category: Public Deliberation

Mechanism: Gatekeeper analysis method

Main purpose of initiative: Consultation, dialogue/deliberation, knowledge co-production

Geographical scale: European

Organizing entity: Think tank

Target groups: Lay publics, stakeholder groups, business/industry

H2020 Societal Grand Challenge(s):

- Food security, sustainable agriculture and forestry, marine and maritime and inland water research, and the Bioeconomy;
- Secure, clean and efficient energy;
- Smart, green and integrated transport;
- Climate action, environment, resource efficiency and raw materials

activists. Our other partners include among others Finland´s Ministry for Agriculture and Forestry, the city of Lahti and the Royal Institute of Technology in Sweden.

Aims and mechanisms

Peloton tries to implement new ways of enabling citizens to make smarter choices. We have created a model for facilitated co-creation that leads to new products and services. We want to bring together gatekeepers of sustainable living and make them aware of their position as gatekeepers. Such gatekeepers include product manufacturers, service providers and different public organizations. We are bringing these gatekeepers together with the citizens they affect and creating smarter products and services through this co-operation.

Our peer accelerator Peloton Club has created a network of resource smart startups. We have coined the term "smartup" that refers to this kind of startup. We are working with the consumer end of cleantech and smart services and try to tap into citizens´ will to make smarter choices.

We have identified relevant consumer groups to work together with companies that produce the products and services these consumer groups use. For example, we organized a workshop where the Finnish food company Fazer created smarter and more sustainable products together with food bloggers. We identified the bloggers manually by going through their sites.

We have always spent a large amount of time on recruiting relevant citizen segments for our workshops and camps. Often this has meant spending a lot of time on the phone and internet searching for relevant people and making arrangements. This has been effective but time consuming. Our citizen outreach has always been workshop theme-relevant: We haven´t tried to recruit people through newspaper announcements but tried to identify specific people ourselves. We have also used snowball sampling and asked our invitees to name other people to invite. Before our camps and workshops we´ve interviewed as many participants as possible on the phone and also encouraged them to do a carbon footprint test online. During our actual workshops we have made an effort to create networks of people and plan as many post-event activities as possible.

Photo Pixabay

Our facilitating practices are empathetic: we try to relate with our participants as much as possible, get to know their motivations and encourage them to create new ideas as fast as possible. This is done with the help of post-its, business model canvases and other tools. We plan every event carefully and facilitators work very actively with the groups. Our aim is always to understand the specific motivation of each participant to continue working with us after a specific event.

We have organized club events in the Helsinki city centre where different smart startups and other sustainability actors have held inspirational talks and we´ve served free pizza for guests. All the events have been open for the public and we have often had a full house. All our advertising has been done through Facebook and the grapevine. Our Facebook group "Peloton Innovation Camp" has over a thousand members.

Results

Over the years Peloton has created many new smart products and services together with Finnish companies and organizations such as the energy smart renovator service created by the hardware retail chain Rautakesko (http://rautianenergiaosaaja.fi/). From companies we´ve expanded our collaboration to the public sector and worked with different cities. We have also worked together with dozens of smart startups to help them take their ideas further. One recent example is the online marketplace provider Sharetribe (https://www.sharetribe.com/). We have had a significant media outreach over the years. Our recent Peloton Innovation Camp in Lahti was covered by the largest economy medias in Finland. Our Smartup Manifesto publication was presented on stage at the largest Scandinavian startup summit Slush and covered by the Finnish Broadcasting Company´s evening news. We have created a large network of gatekeepers that participate in our events.

We have also done research on the influence of peer groups on consumption patterns. This research has led into us recruiting specific groups to our co-creation workshops in order to have an impact on the larger group that these members of the group represent. Such include tenants that want to influence how their housing providers plan spaces and guerrilla farming

experts that worked together with an environmental product manufacturer.

We have learned a lot about how to best engage stakeholders into co-creation. It is important to create a space where no one is expected to commit in advance to financially or otherwise to bring a service or product to the market. Co-creation has to be fun and only after the workshop should the participants be able to evaluate whether to commit further or not. Our events have been spaces of learning for companies organizations and cities where they have talked to each other, worked towards a common goal and also been given information on climate change through our think tanks keynote speakers.

Advantages

(Media interest covered in earlier response) We have been able to transform an initial project into multiple initiatives and a whole Peloton concept, a way of thinking. Currently the Peloton approach is quite well known in Finland: companies have begun to understand the relevance of adapting into megatrends such as climate change and resource scarcity. We have created new concrete services and shown large companies and organizations the benefits of open innovation and co-creation together with relevant stakeholders. We have successfully carried out an innovation camp in Stockholm in early 2015 together with 14 teams from Finland and Sweden, thus showing that the concept can well be applied at least in a Scandinavian context. We also organized a Smartup Summit in 2014 together with Flow Festival in Helsinki (Named as one of the best small festivals in the world by The Guardian) where we brought together visitors from sustainable accelerators and movements in the US and Europe.

Citizen inclusion has been central to Peloton since the beginning as the whole point of the imitative has been helping citizens make more sustainable choices. We´ve engaged thousands of citizens from around the country and given them an opportunity to interact and influence large product and service providers directly. We´ve also helped startup founders to disrupt large markets with more sustainable solutions such as car sharing, smart thermostats and the like.

Obstacles

Our main challenge has been to get gatekeeper organizations to understand their role and the benefits that sustainable co-creation and open innovation brings to them. We have tackled this challenge by underlining the concrete results of co-creation: new services and products. A lot of climate action is based on restricting companies' actions in various ways whereas we have focused on giving concrete tools to companies to work together with citizens in fighting climate change.

Innovative dimensions

We´ve combined thinking and doing in a particular way by studying the theory of co-creation and peer group market influence and on the other hand doing concrete innovation workshops and camps. We´ve expanded from doing workshops into research, peer incubating, event management and multiple publications. We´ve been able to get large companies talk directly to their customers and shift power to these consumers that now become involved in open innovation processes. We´ve created a Facebook group with over 1000 members and have used the social media to attract guests to our various events.

Peloton has grown into a whole array of tools to shape markets and engage citizens in new ways to create services and products. We have studied the impact of consumers´ choices on climate change, identified key impact areas of transport, food and housing and tapped into those through our co-creation events. Our coinage of the term "smartup" creates a new way of identifying impact startups and brings together high technology and material resources in a new way. We have been doing this now for five years and have expanded our range continuously, first within Finland and now in a Scandinavian contexts. We are continuously exploring ways to widen our impact.

Orientation towards societal challenges

- Health, demographic change and wellbeing

- Food security, sustainable agriculture and forestry, marine and maritime and inland water research, and the Bioeconomy
- Secure, clean and efficient energy
- Smart, green and integrated transport
- Climate action, environment, resource efficiency and raw materials
- Europe in a changing world – inclusive, innovative and reflective societies
- Secure societies – protecting freedom and security of Europe and its citizens

We did a large sustainable tourism workshop in Southwest Finland in 2013 to create new services related to among others agriculture tourism, near-produced and ecological food. Our Peloton Club events have featured sustainable forestry companies.

Many of our peer incubator companies work with new energy solutions. One of our recent club events focused on Cleantech

We´ve identified transport as one of the three main components of citizens´ carbon footprint and this is why several of our incubator companies work with transport solutions. One of our longtime partners is the carsharing delivery company PiggyBaggy (http://hello.piggybaggy.com/en/)

Our bottom rationale is fighting climate change through new smart services and products on the consumer market. This is what the whole Peloton concept is about.

Similar initiatives
- Physical showroom Ihme , Finland (http://www.cloudsoftwareprogram.org/theses-and-articles/i/28685/1570/three-approaches-to-co-creating-services-with-users)
- Living Labs, Finland (Eija Kaasinen et al. Three approaches to cocreating services with users, pp.6-7. Available at: (http://www.cloudsoftwareprogram.org/theses-and-articles/i/28685/1570/three-approaches-to-co-creating-services-with-users)
- See Owela Open Web Lab in this catalogue

PARTERRE

The PARTERRE project aimed to demonstrate and validate the business potential of two novel eParticipatory tools for spatial and strategic planning in territorial development at the European level: the electronic town meeting (eTM), a deliberative democracy instrument, and the DEMOS-Plan application for the management of formal and informal consultations of citizens and stakeholders in the context of spatial planning. With 18 local and regional pilots carried out and more than 1,000 European citizens and stakeholders mobilized within the pilots, these eParticipatory tools have proven successful.

Context

The PARTERRE project was partially funded by the European Commission, under the CIP ICT Policy Support Programme 2009 (ICT PSP), Theme 3: ICT for Government and Governance. The consortium involved 8 different partners from 5 countries (Cyprus, Finland, Germany, Italy and Northern Ireland), including academic, regional and local government, as well as business partners, with specific expertise on the aforementioned eParticipation tools. The project has acted in six specific contexts: the District of Larnaca (CY), the Turku Archipelago (FI), the City of Hamburg (DE), the Regions of Sicilia and Toscana (IT), and the Belfast area in Ulster (UK).

Background information

Name: PARTERRE project

Organizer: Regional Government of Tuscany

When: September 2010 – October 2012

Where: Cyprus, Finland, Germany, Italy and Northern Ireland

Who: Francesco Molinari

Additional information: http://www.parterre-project.eu/

Initiative characteristics

PE category: Public Deliberation

Mechanism: Electronic town meeting (eTM)

Main purpose of initiative: Dialogue/deliberation

Geographical scale: European

Organizing entity: Regional governmental body

Target groups: Lay people, stakeholder groups,

H2020 Societal Grand Challenge(s): All seven

Aims and mechanisms

The PARTERRE project aimed to demonstrate and validate the business potential of two novel eParticipatory methods and tools for spatial and strategic planning in territorial development at the European level:

1. The Electronic Town Meeting – eTM, a deliberative democracy methodology and toolset combining the advantages of small group discussion and electronic voting in public assemblies;
2. The DEMOS-Plan solution for the management of formal and informal consultations of citizens and stakeholders in the context of spatial planning.

Key features of the eTM are that:

- The participants are briefed in detail, several days before the event, on the topics to be dealt with – which makes the discussion informed and politically correct;
- During the day, they can see their opinions reflected in the summaries of contributions that are continuously displayed on a maxi screen – which makes the discussion inclusive and improves the climate of collaboration;
- At the end of the day, the participants receive an "instant report" summarising what was discussed during the assembly and including the results of the voting sessions – which enhances their confidence in the utility of the whole exercise;
- The observed satisfaction rate is always about 90% in any survey – which contributes to restoring the reputation of the public agency that organised the event.

Key features of DEMOS-Plan are that:

- All public authorities and agencies involved in the process take benefit from documented savings in the printing and shipping of maps and accompanying documents to the other parties being consulted;
- The solution enables workflow management and can be easily integrated into the existing IT infrastructure of the agency;

- Both formal (i.e. mandatory by law) and informal (optional, e.g. pre-emptive) consultations of citizens and stakeholders can be handled by the system;
- Every participant can receive a formal response to their application or contribution by the public body in charge of the process.

The approach taken in the project aimed at refining the above technical solutions in multicultural, multilingual pilot environments that involved real citizens and businesses in discussions on real planning and programming issues, in compliance with the territorial Living Lab approach. The latter means that regional as well as city level stakeholders and citizens were mobilized and engaged in real life debates and policy design or evaluation experiments, generating as outputs the socio-digital validation of proposed technologies.

Overall, 18 local and regional pilots have been carried out between 2011 and 2012, adopting either of the two ICT solutions and in some cases, trialling a combination of them. More than 1,000 European citizens and stakeholders have been mobilized within the pilots.

Beside the contractual actions and initiatives, the project also delivered two ICT tools that are still freely available on the official website (www.parterre-project.eu): an interactive "decision tree", highlighting the rationale and utility of the two tools in a user friendly and immediate way; and a self-assessment questionnaire, leading to a calculation of the ROI (Return on Investment) of eParticipation, as well as providing a discreet, non-engaging and informal evaluation of the benefits that the PARTERRE services can bring to the customer.

Results

With respect to the main objective of the project (i.e. the market validation of a pan-European service built on the top of the two solutions), the pilots carried out in Cyprus, Finland, Germany, Italy and Northern Ireland have particularly highlighted the potential of the E-TM as a tool for sustainable eParticipation in local decision making and of Living Labs as intermediary

organisations between local governments and constituencies. By "sustainable eParticipation" we mean an innovative model of public-private partnership, which is capable of finding the best convergence of interests between direct democracy enthusiasts, elected officials in charge of controversial decisions according to the rule of representation, and civil servants willing to leverage the potential of ICT to improve the efficiency and effectiveness of government actions. The marketing of DEMOS-Plan as a service to public sector organisations has only made progress in Germany so far, while in other countries its benefits have proved more difficult to communicate. In turn, the marketing of the Electronic Town Meeting as a service is doing some good progress in Italy only at the moment, particularly in the cities of Palermo and Bologna.

A promising application of the PARTERRE approach has been identified in the process of definition of "shared" Smart Specialisation Strategies (S3) that is now engaging all EU Regions and Member States in the context of the new 2014–2020 programming phase of the Structural Funds.

Advantages

Compared to the AS-IS scenario (i.e. without PARTERRE), three different kinds of benefit have been quantified:

1. Savings on direct costs (e.g. printing and postal services) that are heavily dependent on the nature of the underlying processes, but certainly higher than the total cost of ownership of the DEMOS-Plan solution, particularly when more than one planning or assessment process is simultaneously managed by a public authority in the same time frame;
2. More efficient arrangement of public consultations (basically in terms of reduced cost per active participant), as a result of the Electronic Town Meeting, which can perform well especially when several hundreds of attendees are expected – compared with the poor attendance rate of most public consultation forums and websites;
3. Increased social returns in terms of: trust and confidence in institutions, improved reputation of the public authorities in charge, and the possibility to "crowdsource" innovative ideas and proposals from the general public. This also creates room for better and faster implementation of policies, due to the wider consensus built by the PARTERRE tools within the constituency.

Obstacles

Among the lessons learnt from the eParticipation Preparatory Action, a particularly relevant one refers to the long-term sustainability of the trials carried out: permanent adoption of electronic tools for civic participation by public sector organisations is more likely to occur when there is a convincing business model showing financial savings or at least organisational and political benefits in a clear way. A necessary precondition for this business model to 'square' is that (offline) participation has to be formally integrated in the legal or regulatory framework the targeted organisation belongs to. This is the case of environmental assessment (at the strategic level) and spatial planning (at the operational level), within the EU-wide framework the first of the European Spatial Development Perspective (ESDP) and more recently the Territorial Agenda.

EU Directives and/or National legislations exist that establish participation as a mandatory requirement for a great number of policy processes and administrative procedures – mostly involving Regional and City Councils in Europe. However, key barriers to the development of Participation and e-Participation in spatial planning in Europe remain and are currently fourfold:

a) Legislative change is needed to ensure systematic access of citizens and stakeholder groups to decision making environments (although some examples exist of EU level legislation going in this direction – see e.g. the SEA, Strategic Environmental Assessment directive (2001/42/EC) requiring certain development plans and programmes to undergo public scrutiny before they are adopted);
b) Capacity building is required for both citizens and public sector officials (beyond the mere technicalities – following the "Sustainable eParticipation" concept);

c) There is still limited, unreliable and poorly visible demonstration of real impact on public decision making and its outcomes;

d) Poor awareness / incomplete exploitation of the potential of ICT for participation in planning.

Innovative dimensions

Eighteen local and regional pilots have been carried out during the project, adopting either of the two ICT solutions proposed above and in some cases, trialing the combination of the two.

The specific contents of the pilots are within the policy domains of Spatial Planning, SEA (Strategic Environmental Assessment), Strategic Planning and Other.

The specific aims and contents of the trials have been decided and agreed with the competent policy makers or legislators. Therefore, all the pilot experiments have been run in real-life conditions, as prescribed by the Living Lab approach.

Orientation towards societal challenges

- Health, demographic change and wellbeing
- Food security, sustainable agriculture and forestry, marine and maritime and inland water research, and the Bioeconomy
- Secure, clean and efficient energy
- Smart, green and integrated transport
- Climate action, environment, resource efficiency and raw materials
- Europe in a changing world – inclusive, innovative and reflective societies
- Secure societies – protecting freedom and security of Europe and its citizens

Particularly in, but not limited to, the ICT domain, mainstream research in the past three decades has growingly focused on and demonstrated the potential of active end users involvement in the full product/service creation chain, from ideation to design, from development to validation and verification, up to the marketing phase. Users as "Guinea Pigs" have left the closed rooms of lab-like settings, where it was even hard to accommodate them. The concept of pilot experimentation in real life environments, which is typical of the Living Lab approach, is a truly European achievement now widespread in the innovation community. Even the "ask the users" principle has evolved over time, from seeking individual expert advice to exploring the potential of collective knowledge "hidden" in the crowds. This trend is definitely here to stay and positively affects all of the above challenges.

Similar initiatives
- See Imagine Jersey 2035 in this catalogue

Imagine Jersey 2035

Imagine Jersey aimed to inform and engage the public in a deliberative process on the struggles in Jersey regarding current and forthcoming impacts of demographic change. Imagine Jersey was designed to involve as many citizens as possible while maintaining a high quality of deliberative conversation. With an innovative combination of large-scale deliberation, electronic voting and a trade off game', the project involved over 1300 citizen who expressed their preferences on how to handle the projected annual deficit of £140 million in the States of Jersey budget by 2035.

Context

Jersey is a self-governing British Crown dependency, located in the English channel with almost 100,000 inhabitants. Like many countries Jersey currently struggles to come to terms with the impact of demographic change. For the States of Jersey (Jersey's Parliament and Government) a number of difficult choices needed to be made and there were no palatable options. There had been numerous expert reports commissioned but the politicians felt they needed an understanding of what the public wanted, in order to ensure that decisions were seen to be legitimate.

Jersey in particular faces challenges as being a small island which will likely require radical changes to the States' revenue. The public's views on the Island are divided when it comes to taxes, immigration etc. and there was a sense that the most vocal groups might not represent the majority view.

Background information

Name: Imagine Jersey 2035

Organizer: States of Jersey (Funder) Involve (Deliverer)

When: 2007–2008

Where: Jersey (Channel Islands)

Who: Edward Andersson, The Involve Foundation

Additional information: http://www.gov.je/SiteCollectionDocuments/ Government%20and%20administration/ID%20ImagineJerseyFinal%20 Report%2020100323.pdf; http://involve.org.uk/wp-content/ uploads/2011/04/2.5-Imagine-Jersey.pdf

Initiative characteristics

PE category: Public Deliberation

Mechanism: 21st Century Town Meeting (by AmericaSpeaks)

Main purpose of initiative: Consultation, dialogue/deliberation

Geographical scale: Regional

Organizing entity: Governmental body (funder), think tank and charity (deliverer)

Target groups: Lay publics, stakeholder groups, public officials

H2020 Societal Grand Challenge(s):
- Health, demographic change and wellbeing;
- Food security, sustainable agriculture and forestry, marine and maritime and inland water research, and the Bioeconomy;
- Smart, green and integrated transport;
- Climate action, environment, resource efficiency and raw materials;
- Europe in a changing world – inclusive, innovative and reflective societies

Aims and mechanisms

The Stated Aim was:

- To enable the public to understand how Jersey's society is changing and to encourage debate about the kind of Island community Jersey wants for the future.
- To inform the decisions of the States of Jersey by giving an indication of people's preferences towards the options and the boundaries within which the states should operate in putting policies in place to manage these changes in the future.

The process was designed to allow as many people as possible to take part, while also creating a high quality deliberative conversation with a smaller group. Through the process it was hoped also to build the understanding of the tradeoffs surrounding the aging society amongst the public in Jersey and to inform the decision of the States of Jersey about the public's preferences for solutions.

The Imagine Jersey 2035 process included a number of different approaches, including an online consultation, consultation meetings with stakeholder groups, a one day deliberative event open for all to participate and a half day event specifically for young people. The youth event originated from the first Imagine Jersey public consultation at which some of the young people who attended requested a follow up event specifically for young people in Jersey.

At the events electronic voting and a 'trade off game' were used. These tools allowed the gathering of data on the voting pattern of individuals on the day as well as data broken down by different subsections of the population.

Before the events a number of future scenarios, which illustrated trade offs for Jersey were developed and tested at Pre-testing focus groups with groups of young people, older people etc.

The online consultation made use of a structured questionnaire and ran for eight weeks prior to the public event.

The deliberative events ran roughly as follows:

1. Values session – Starting getting people to think about what is important to them
2. Presenting the problem – Getting participants to grips with the dilemmas facing Jersey
3. Scenarios – Looking at where the government's thinking is and considering the options
4. Solutions – Looking at what's missing in the scenarios and developing solutions that people feel ownership over

Consultation guide published in November 2007.

Traditional written consultation 20 November 2007 – 8 February 2008.

Online survey, 26 November – 31 December 2007.

Deliberative public conference – 19 January 2008.

Youth Deliberative Event – 28 March 2008.

An important part of the process was the tradeoff game in the last session of the day. The purpose of the tradeoff game was to support a creative discussion around the compromises that will need to be made in the future as Jersey addresses the economic and social challenges of an ageing population.

Each table group was asked to come up with a solution to the projected annual deficit of £140 million in the States of Jersey budget by 2035. The participants were given cards with different policy options, each stating how much money it would generate/save.

Results

Over 1,300 citizens participated in total: 1257 in the survey, 136 in the public event and 86 in the youth event. In addition, 35 responses to the written consultation were received, some of which were submitted by individuals and some by groups. All participants were self-selected.

There was no formal evaluation. The Feedback from participants however indicates an overall positive experience with the event. 37% indicated that they felt that they completely had their say and 47% felt that they partially had their say.

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The States of Jersey gained a deeper understanding of the values and views of their population.

The consultation revealed strong feelings among Jersey's citizens about the issues. There was very strong oppositions to any developments on greenfield land.

Overall, there was broad support for raising the pension age and strong opposition to reducing the value of the pension. There was mixed feelings about increasing taxes. When looking at the trade off game results it became clear that the willingness to accept taxes might be higher than the voting indicated.

Migration was the most contentious issue; but as the day went on and people weighted the different options in the public event, many arrived at a reluctant acceptance. At the end of the trade off games, 19 of 20 citizen groups agreed that some level of inward migration would be a necessary part of the solution to the economic and social challenges ahead.

There were some differences between the general deliberation and the youth event. Participants at both events came out in favour of preserving Jersey's Greenfield areas; ensuring affordable housing and work opportunities for residents of Jersey; growing the economy; and working for longer. Young people were on average more in favour of inward migration than increased taxes.

Advantages

Using a mixed approach allowed us to keep the process open to a large number of people, whilst having a deep and deliberative conversation. It provided a mechanisms for the time poor to contribute. The use of the trade off game also allowed us to see group negotiations in action and see how they handled difficult trade offs.

Obstacles

There were a number of challenges in the process. There is limited trust in the political system on Jersey, with very low Voter turnout. This meant that

many people mistrusted the process. There was also the issue of the highly complex scenarios developed by experts and how to present them in an understandable way to the public (without diluting the content). It was also difficult to develop an event which would cover the many different topics in one day.

Ultimately one of the biggest obstacles was the changing policy landscape. The projections and scenarios developed and used for the project were developed before the recession. Once the economy worsened many of the assumptions in the engagement process were invalid and thus the policy impact was lessened.

Innovative dimensions

For Jersey many of these approaches were very new, including the deliberative format, the electronic voting and the trade off game aspect. The latter is also novel by international standards.

By combining such a diverse process it was hoped that each element would deliver a different type of output. The survey results were traditional public opinion data, which was weighted to reflect the opinions of a representative section of Jersey's citizens. The event data was not a representative sample of the Jersey public, participants were self-selected and thus the data was not weighted. However, the event findings were arrived at through a unique process of deliberation and learning. Those who attended the event took part in a full day of information, reflection, discussion and voting before reaching their final conclusions.

Orientation towards societal challenges

- Health, demographic change and wellbeing
- Food security, sustainable agriculture and forestry, marine and maritime and inland water research, and the Bioeconomy
- Secure, clean and efficient energy
- Smart, green and integrated transport

- Climate action, environment, resource efficiency and raw materials
- Europe in a changing world – inclusive, innovative and reflective societies
- Secure societies – protecting freedom and security of Europe and its citizens

The process was particularly focused on challenge One (Demographic change being a particular focus). The discussion also touched on land use (thus challenge 2), as well as challenges 4, 5 and 6.

The themes of the conversations were:

1. Economic growth
2. Pension age
3. Spending reductions
4. Migration
5. Housing and green space

Similar initiatives

- Detroit - Planning for a City of the Future, 2014 (http://www.wilsoncenter.org/article/detroit-planning-for-city-the-future)
- See the Empowering Citizen Voices in the Planning for Rebuilding New Orleans in this catalogue

G1000

The G1000 is an independent citizens' project aimed at revitalizing democracy. It started as an idea, but over a short period of time grew to be the biggest citizens' initiative for democratic innovation in Europe. The G1000 project facilitated several inclusive events such as a citizen's summit with 704 participants and subsequent citizen panels. The outcome of the project was mainly that its ideas and its methods stirred public opinion and set in motion a debate about the quality and organization of democracy. Furthermore the project has influenced public debate regarding democratic renewal and numerous of different civic participation initiatives have arisen inspired by the G1000's ideas.

Context

You probably remember that after the 2007 parliamentary elections a wobbly government was formed, and after the 2010 elections none whatsoever. Belgium broke all international records in the field of negotiations for government formation. In that context, David Van Reybrouck and Paul Hermant have thought to gather in Brussels a large group of citizens to discuss the future of the country. And then, all of a sudden, things went very quickly. Just a week later, they were conferring with five experts on citizen participation. And over just a few months, this small group of 7 became a group of 27 people. Scientists, journalists and intellectuals, but also people from the communications and logistics industries and people from the cultural sector. Dutch, French and German speakers; young and old; new and old Belgians. People with very different political preferences, but one same preoccupation: the quality of our democracy.

Background information

Name: G1000

Organizer: G1000 (with the support of the Foundation for Future Generations)

When: July 2011 – November 2012

Where: Belgium

Who: Vincent Jacquet & Min Reuchamps, Université catholique de Louvain, and Benoît Derenne, Foundation for Future Generations.

Additional information: www.g1000.org Caluwaers, D, & Reuchamps, M. (2014) The G1000: Facts, figures and some lessons from an experience of deliberative democracy in Belgium. Brussels: Re-Bel.

Caluwaerts, D., & Reuchamps, M. (2014). Strengthening democracy through bottom-up deliberation: An assessment of the internal legitimacy of the G1000 project. *Acta Politica*.

G1000. (2012). Final report: Democratic innovation in practice. Available online: www.g1000.org

Initiative characteristics

PE category: Public Deliberation

Mechanism: Citizens' Summit

Main purpose of initiative: Dialogue/deliberation

Geographical scale: National

Organizing entity: Independent and nonprofit foundation

Target groups: Lay publics

H2020 Societal Grand Challenge(s):

• Europe in a changing world – inclusive, innovative and reflective societies

On 11 June 2011, after exactly one year without a government, the Manifesto of the G1000 was published. No fewer than five national newspapers printed it: *De Standaard, De Morgen, De Tijd, Le Soir and La Libre Belgique*. "If the politicians can't provide a solution, then involve the citizenry in the debate," it said. "What ordinary people lack in knowledge, they make up in freedom." After only a few days, more than 10,000 people had signed the Manifesto, more than 800 volunteers registered, and thousands of donations streamed in.

Aims and mechanisms

The G1000 aims to be a citizen initiative that is capable of innovating democracy, a project which attempts not to overthrow the representative system, but to complement it and to breathe new life into it. Its objective is to gather ordinary citizens in a setting, which is conducive to open and uncoercive deliberation on possibly contentious political issues, and to let citizens themselves experience democracy and thus the difficulty of building bridges over highly polarizing issues.

The G1000 citizens' summit was the middle part of a hop-step-jump performance that makes use of three forms of citizens' participation.

Phase 1, the "hop", took place online. Citizens could bring up subjects and discussion themes they deemed worth including in the agenda of a citizens' summit. Each subject was then subjected to a vote. The three most popular subjects finally became the themes for discussion of the G1000 (Phase 2, the "step"). The findings were then deepened in the "jump" phase. 32 'delegates' concluded the process, assisted by facilitators and experts.

In the run-up to 11 November 2011, the most heated arguments were about the composition of the group of citizens who would participate in the citizens' summit. The main principles of the G1000 – inclusion and diversity – were broadly defended. The challenge that we were facing time and again was: "how can a group of around 1,000 citizens be as diverse as possible". In order to guarantee a diversity in age, gender, ethnicity, social status and so forth, the organization chose to recruit citizens at random, using sortition. Because each Belgian citizen should have the same chance

to be invited and let their voice be heard. We used quotas for language, gender, age and province of residence. Moreover, 10% of seats were reserved for socially vulnerable persons and groups who are hard to reach over the telephone, such as the homeless or illiterate. The numbers speak for themselves. Notwithstanding the beautiful weather and the railway strike on 10 November (which had knock-on effects until the next morning), and the fact that G1000 participants are not offered any financial compensation (excluding their travelling expenses for a round trip to Brussels), the number of attendees was confirmed to be 704 persons. The citizens enter a ten-hour dialogue. They discuss the three themes on the agenda around tables that seat 10 people, with one facilitator per table. These people take charge of streamlining the citizens' deliberation. All of them are volunteers who received intensive training the day before the citizens' summit. Facilitators aside, reporters, interpreters and logistics assistants are active as well. They enable the participants to process large amounts of information in a short time, and to use this information in discussions and debates. There are 32 bilingual tables, each of which with the services of an interpreter. 30 tables are exclusively Dutch-speaking, 18 French-speaking and one is mixed French- and German-speaking. Each subject is professionally introduced by two academic experts. They have their say, but not the final say, as there is a lengthy discussion around each table afterwards. Subsequently, the findings from each table are relayed to the central desk, which clusters them and projects them on large displays. Each participant can then indicate their preferences one last time with their individual voting devices. A short while later, the results of each round of voting are declared.

During Phase 3, the ideas that have been roughly sketched during the G1000 Citizens' summit are expanded into concrete policy proposals. The challenge is to select a diverse group of citizens to take charge of this task. On the day of the G1000, all participants are invited to register as candidates. No fewer than 491 participants register. From this group, 32 people are randomly selected, but again the balance regarding gender, language, province, age and education level is carefully kept. Phase 3 has expansion as its goal. In order to guarantee this over a period of 3 weekends, one central encompassing theme is selected prior to their first convention the 32 citizen

Photo Pixabay

panel members have the opportunity to voice and substantiate their preference. The theme distilled from these preferences is "How to address labour issues and unemployment in our society?"

Results

What were the outputs of the mini-public? This is probably one of the most critical questions for any deliberative endeavour. When looking at the uptakes of mini-publics, we must clearly distinguish between two kinds of impact: public policy content of the different authorities and the agenda setting effect on the public debate. It should not come as a surprise that from its very conception, the G1000 was thought to be a citizen-led initiative, with no ties to formal decision-making institutions. The will to stay independent from the traditional political authorities has reduced the likelihood that this debate would be translated into concrete public policies. The presence of the presidents of the different parliaments of Belgium during the final session of the G1000 seems to be the only (weak) link with the formal and real political process of decision making. Does this imply that the G1000 was an island of deliberation completely separate from the real politics that influences citizens in their everyday life? Several elements show that the G1000 has influenced public debate in Belgium on one central topic: democratic renewal. That is the major justification provided by initiators of the project (G1000, 2012). The G1000 has given a clear example, largely mediatized in mass media, which embodies the demand for deliberative democracy. This role of agenda setting is observable in different places. Because of its sudden visibility the G1000 set off a lot of new initiatives. The young organization was invited all over the country to talk about their experiment on deliberative democracy: at meetings of the Union of Flemish Cities and Municipalities, at the Union of Flemish Provinces, the Walloon parliament, civil society organizations, think tanks and at universities. After the citizens' summit the number of civic participation initiatives rose swiftly. There was a K35 in Kortrijk, a G100 in Kuurne, Grez-Doiceau, a G100 about the future of education, another G100 at a high school in Leuven and Ieders Stem Telt, a project aimed at getting vulnerable groups involved in debate about the

elections. Indeed, citizens' participation is a challenge that does not stop at the borders of a country. The G1000 exchanged ideas with several European countries (e.g. G1000 in Amersfoort en Uden in the Netherlands).

Advantages

The G1000 project did succeed in one important thing: its ideas and its methods stirred public opinion and set in motion a debate about the quality and organization of democracy. It instigated a public discussion on what it means to be a citizen in modern society, and on how politics should be shaped in order to meet the demands from the citizens. And even more than that, it showed the wisdom and the passion of the crowd. Many citizens arrived at Tour & Taxis on that 11th of November with scepticism, but at the end of the day, the motivation among the participants and the pride of being part of the event set the tone.

Obstacles

The major obstacle was the lack of impact on the content of public policies. It should not come as a surprise that from its very conception, the G1000 was thought to be a citizen-led initiative, with no ties to formal decision-making institutions. The will to stay independent from the traditional political authorities has reduced the likelihood that this debate would be translated into concrete public policies. There was no obligation for members of the government to take the report into account, neither a proposal for a referendum nor a place for the deliberation between participants and politicians. Analysing causality in the content of public policy is always difficult, but we can argue that the weight of the G1000's proposal was quasi inexistent on the content of public policies in Belgium, despite the presence of the presidents of the different parliaments of Belgium during the final session of the G1000 and the organisation of the G32 three weekends of deliberation in three Parliaments.

Innovative dimensions

Several elements were innovative:
- The articulation between the three phases: the G1000 would consist of a three-stage plan: an online consultation, a one-day citizens' summit and a citizen panel of three weekends.
- The number of participants: notwithstanding the beautiful weather and the railway strike on 10 November (which had knock-on effects until the next morning), and the fact that G1000 participants are not offered any financial compensation (excluding their travelling expenses for a round trip to Brussels), the number of attendees was confirmed to be 704 persons. 52% of attendees were female and 48% men; 61% Dutch- and 39% French-speaking. There were also 4 German speakers in attendance. A fair number of participants have a mother tongue that is not an official national language. The age of the attendees spanned the spectrum between 19 and 85 years old.
- Face-to-face deliberation with different languages: During the citizen's summit, 30 tables at the G1000 were bilingual, and an interpreter was assigned to each of these tables. During the three weekends of the G32, there were always interpreters.

Orientation towards societal challenges

- Health, demographic change and wellbeing
- Food security, sustainable agriculture and forestry, marine and maritime and inland water research, and the Bioeconomy
- Secure, clean and efficient energy
- Smart, green and integrated transport
- Climate action, environment, resource efficiency and raw materials
- Europe in a changing world – inclusive, innovative and reflective societies
- Secure societies – protecting freedom and security of Europe and its citizens

The G1000 is an initiative that wants to give public attention to and promote deliberative democracy in Belgium. But it also takes place within a broader international context, so it's worth to look beyond the borders of the Belgian state. The G1000 is part of large, international stream of initiatives all aiming at increasing the participation of citizens in democratic processes. Throughout a large number of democracies around the world, including some countries that only democratized in the last two decades, experiments with citizen participation through organized deliberations are now being conducted. It is more than a Belgian or even a European phenomenon. Above all, the project wanted to prove the value of deliberative democracy in Belgium. So it is relevant with the societal challenge *"Europe in a changing world – inclusive, innovative and reflective societies"*.

Similar initiatives
- Constitutional Council in Iceland, 2011
  (http://participedia.net/en/cases/icelandic-constitutional-council-2011)
- Citizens' Assembly on Electoral Reform, Ontario
  (http://www.citizensassembly.gov.on.ca/)
- See We the Citizens in this catalogue

Public Participation

morgueFile free photo

Youth Council Espoo

The Youth Council in Espoo has existed since 1997 with the aim of trying to influence decisions that primarily concerns children and young people in Espoo. The Youth council is a formal way of engaging citizens and young people directly with the decision-makers. Through the years the Youth council has discussed and presented various ideas and resolutions to the city administration and thereby participated and influenced decisions made by the administration.

Context

Youth Council is a group of young people who uses the voice of youth in the city of Espoo. Youth Councils aim is to influence the decisions that the city officials make, they raise questions and perspectives to the issues they want to change and express opinions to those issues that they see important. Usually these issues concern children and youth but also traffic and city planning. Youth Council is a formal initiative and also non-political group.

Members of the youth council are selected every two years by elections. Every young people who are 13 to 18 years old and live in Espoo, has a right to run as a member and vote. Now youth council has 42 members. First youth council was selected in 1999. Last election was organized in 2013.

Aims and mechanisms

The aim is to influence those decisions that concerns children and young people but also those issues that are important to young people as municipal citizens. Youth council can be seen as a formal way to make difference, be part of politics in a city (but not officially be part of political party) and contribute the ideas of young people.

Background information

Name: Youth Council Espoo

Organizer: City of Espoo

When: November 1997 – ongoing

Where: Finland

Who: Niina Ekstam, Youth Services of Espoo

Additional information: http://www.espoo.fi/fi-FI/Kulttuuri_ja_liikunta/Nuoriso/Nuorisovaltuusto

Initiative characteristics

PE category: Public Participation

Mechanism: Youth Councils

Main purpose of initiative: Dialogue/deliberation, co-governance

Geographical scale: Local/urban

Organizing entity: Local governmental body

Target groups: Lay publics, youth, public officials

H2020 Societal Grand Challenge(s):
- Health, demographic change and wellbeing;
- Europe in a changing world – inclusive, innovative and reflective societies;
- Secure societies – protecting freedom and security of Europe and its citizens

Youth council can be a link between city officials and other youth. Youth council is a tool of democracy education, a way to learn how the city structure works and how decisions are made. The aim is to have real dialogue and discussions with those who really are making decisions.

With the help of other young people and youth workers, the youth council organizes events, they make formal initiatives to the city boards, they have a seat in city committees and are asked to make statements to issues that may concern youth and children

The participants to the youth council are voluntary young people who have decided to run and have been selected to youth council. They are also selected by other youth. The task is to give young people a feeling of empowerment, engage them as active role of municipal citizens. Members of the youth council plan and arrange the activity themselves. They themselves select the issues that they want to influence. Youth council is given a budget from the city every year to plan and organize activities. They have official meeting with agenda and formal minutes, they have annual action plan and report of activities.

They do different kind of events to promote themselves to other young people. One challenge is to get other young people to know what the youth council does and what it tries to achieve. Youth council is for everyone but it´s formal structure can also be repulsive. Also the achievements can be very little thing or happen in long-term that members of youth council may have changed already. So identifying those achievements can also be challenging. Marketing the activities and events is also challenging and that´s why activity done with partner is often more effective.

They also take part and can be invited to meetings of Espoo city board to tell their opinions and what kind of activities they are organizing. Youth council makes cooperation with political youth organisations in the area (in Espoo or in South Finland) and with other youth organisations as well. Other good examples of cooperation actors are schools student boards (in different school levels), youth houses, youth services and of course other cities youth councils.

Youth council selects a chairman, vice chairman and a board who prepare the activities or formal papers to the youth council meetings. Youth council has different kinds of roles and a member can decide to take a more active role or just take part in meetings a couple times a year.

Results

The outcomes and impacts can be different. Youth council can make a formal initiative to the city board that there are too little of trashcans in some areas of Espoo. That initiatives outcome can be that more trash cans appear in that location. One statement made in cooperation with local political youth originations about better opportunity to present their activities in schools brought an annual event that gathers different kinds of democracy education actors, youth organisations and every nine-grade student in Espoo under the same roof. This big event tries to bring into knowledge different ways of how young people can take part and influence.

Some actions and discussions can influence on decision-making as well. The best impacts can be made in that point when decisions are not yet made but on discussion. This also requires attention from the city officials, have they remembered to ask from the youth, why their opinion could matter and what are the ways to ask.

Active members of youth council have most certainly had impacts by being a part of youth council. Often the membership of youth council has opened doors to take part in some other youth organization as well and has given good feedback and grown self-belief. Sometimes those ideas that has started from the scratch and eventually grown into big thing, give a feeling of capability: we did it.

It is important to inform others about these achievements. Local media is usually quite interested about issues that involve youth and sometimes outcomes can be found in the news.

In the end of term the youth council's actions are evaluated and reported to the city board. The worker of youth services closely supports the activities. As young people are active, they also need help along the way.

Advantages

Some of the advantages may be personal and some practical. Youth council is an actor that gives city official a way to hear youth. Also it is a way to make

the youth voice heard. Youth council can bring to its members strong feeling of being part of municipality and its development. To city officials' youth council can bring new perspective and ideas how to make our hometown better.

Youth council in Espoo is very formal and may be characterized as representative. There are youth councils in other towns in Finland also, but most of them are not so formal. In Espoo, the challenge is a big city organization where decision-making is slow and heavy. More advantages could be found if the structure of the youth council could be easier but this structure also gives the youth council members a thought of being´an important part of the city

Obstacles

Youth council has reached its role as permanent, continuing action in Espoo and has been found a good and practical way to contribute youth participation. It has quite long history.

Sometimes there are difficulties to find participants, interested young people who want to take part in the youth council. Youth council is not seen interesting or effective way to influence. Lot of this has to do with the fact that public does not know what the youth council may have achieved in the past. That is why marketing and communication with other young people is important.

There may also appear arguments and conflicts between different members of youth council. 42 members is quite a big group to work together as friends. These situations affect the whole group and also shows to outsiders that argue and fights are solved together with the youth worker who supports the youth council.

Sometimes people or decision-makers in administration don´t see youth council as an important actor that could be easily reachable or give opinions that are serious.

This sometimes has to do with attitudes, previous experiences or unawareness. These prejudices can be changed and nowadays attitudes are more open. Widely children and young people are wanted to take part and their opinions are seen as valuable.

Photo Pixabay

Innovative dimensions

Youth council is not one of it is kind in Finland or in Europe, but has existed for a long time. It is one of the oldest and biggest youth council in Finland. It´s continuity has given opportunity to develop and modify it´s activities.

Youth council is an innovative initiative as it always looks like its members make it. Every time new members arrive, it´s course chances. It is always new to some members yet at the same time, old to other members. As young people assimilate the changes in society quick, through social media for example, the youth council does the same.

Youth council´s structure may be formal but young people have succeeded to make it adaptive. They can make fast decision in issues they find important and stand by each other as they demand chances. This teaches them to work together, believe to themselves and justify reasons in order to make influence. They are quite willing to try new things and they easily take a grip to new things. Young people are creative and see things differently.

The limits of youth council's actions are almost boundless. The main idea is to influence those issues that are relevant to youth or to the city of Espoo, but of course youth council can make a statement about the national issues as well.

Orientation towards societal challenges

- Health, demographic change and wellbeing
- Food security, sustainable agriculture and forestry, marine and maritime and inland water research, and the Bioeconomy
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- Europe in a changing world – inclusive, innovative and reflective societies
- Secure societies – protecting freedom and security of Europe and its citizens

Health and wellbeing services in the world of ´youth guarantee´ are important and highlighted.

As Finland is an active member of Europe, its politics and societies reflects to us and to thoughts of young people as well.

Members of the youth council are usually very aware about politics and talk about those things a lot. All though it is important to remember that in general youth council is non-political. Yet the interest to change world piece by piece is common to its members.

Security in Espoo (in Finland) is also a topic that brings questions and discussion among the youth council.

Similar initiatives

- Youth Council, Lambeth, UK, 2002 – (Smith, Graham (2005): *Beyond the ballot. 57 Democratic Innovations from Around the World*. The POWER Inquiry, p. 69.)
- Chicago Alternative Policing Strategy (CAPS)1993 - (https://portal.chicagopolice.org/portal/page/portal/ClearPath/Get+Involved/How+CAPS+works/What+is+CAPS)

We the Citizens

We the Citizens was motivated by the wish of influencing discussions among senior government politicians about the design and operation of a planned Irish constitutional convention. Through a citizens' assembly (CA) a random selection of ordinary citizens were engaged and placed at the heart of discussions over reforming Ireland's constitution. We the Citizens largely met its aim of influencing the government's agenda relating to the establishment, design and operation of the Irish Constitutional Convention.

Context

This was effectively a research project, funded by Atlantic Philanthropies (an international philanthropic organisation with offices in Dublin). I led a team of academics who bid for research funding. We received roughly €640,000. Our motivation was to influence discussions among senior government politicians about the design and operation of a planned Irish constitutional convention that was promised by the government newly elected in 2011. The funding enabled us to set up We the Citizens (WtC) that appeared to the outside world as a civil society operation. We operated a professionally staffed office in Dublin; had a prominent chair and ran a series of nationwide activities inviting members of the public to engage in a dialogue. This helped develop an agenda for a pilot citizens' assembly (CA) in summer 2011 (involving a random selection of 100 Irish citizens). Intensive survey work underlay the endeavour. We produced a report (a copy is available) and met with senior government ministers. A year later the government established the long-awaited Irish constitutional convention, two-third of whose members were randomly selected citizens, I was appointed as research director of that.

Background information

Name: We the Citizens

Organizer: Prof David Farrell, Dr Elaine Byrne, Dr Eoin O'Malley, Dr Jane Suiter

When: January 2011 – December 2011

Where: Dublin, Ireland

Who: Prof David Farrell, University College Dublin

Additional information: http://www.wethecitizens.ie

Initiative characteristics

PE category: Public Participation

Mechanism: Citizens' Assembly

Main purpose of initiative: Dialogue/deliberation, Co-governance

Geographical scale: National

Organizing entity: Academic institution

Target groups: Lay publics, public officials

H2020 Societal Grand Challenge(s):

Aims and mechanisms

The aim was to inform public debate about the merits of mini-publics (deliberation) as a means of engaging ordinary citizens in debates over constitutional reform in Ireland. This was in the context of the worst economic crisis in our country's history and a strong sense that our system needed radical reform to prevent recurrence. The survey data underlying the CA meant that we were able to prove statistically that engagement in the CA informed the members, facilitated changes of mind on certain key issues, and improved knowledge and efficacy. In short, this was a version of a 'deliberative poll', but one with careful attention to having control groups to measure our change effects against.

The 100 CA members that were at the heart of the process were selected randomly (quota samples: to ensure a good mix on gender, age, region, etc.). The CA members were surveyed before and after the pilot CA. In addition we had 3 control groups: a group who were surveyed before and after but who had no other involvement; a group surveyed before and after but who had been sent briefing documents (to test for the difference between information and deliberation effects); and a group who were surveyed just on one occasion.

The organisers were as follows:

- Prof David Farrell (academic director and principal investigator of the project). Other academic team members: Dr Elaine Byrne; Dr Eoin O'Malley and Dr Jane Suiter. – Chair of We the Citizens: Fiach MacConghail (Director of the Abbey Theatre and member of the Senate).
- Director of We the Citizens: Caroline Erskine and a team containing two others (these three were employed for a year on this contract).
- In addition we had a number of interns and a large group of facilitators (mostly post-graduate students who we trained for this task and who received a small fee for their service).

Activities:

- Seven evening events around the country to which members of the public were invited to attend. The purpose was to raise attention and also to gather information on themes that resonated with the wider Irish public. Generally we had between 70–130 in attendance for several hours.
- A large scale commissioned survey by a leading market research company testing public opinion on the issues that emerged from the regional events (and also recruiting the CA members). This was followed up by a second survey after the CA weekend.
- The weekend long CA in summer 2011 in Dublin.
- A follow up hour long live broadcast on the main Irish TV channel at which we presented our findings (this can be viewed on youtube).

Results

Our final report was presented to government, including in a private meeting we had with senior government ministers. This informed the design of the Irish Constitutional Convention (notably in having a random selection of ordinary citizens at the heart of this endeavour too; the following of deliberative principals; and including myself and other members of my academic team as academic advisors). The ICC operated from late 2012 – early 2014 and produced a number of reports, some of which are still being considered by government. To date three referendums to change the Irish constitution have been promised – including one in spring 2015 on marriage equality.

In short, WtC largely met its principal aim of influencing the process of constitutional reform in Ireland.

Advantages

The principal advantage was how it gave an important opportunity to tap 'unstructured Irish society' (i.e. ordinary citizens) and place them at the heart of discussions over reforming Ireland's constitution.

Obstacles

The initiative faced a considerable amount of media criticism, much of which has now dissipated in the light of the success of the subsequent ICC.

There were the usual issues with trying to arrange a deliberative poll (the survey company had to over-recruit to ensure that we had 100 members).

We also faced some criticism from civil society groups some of whom were not happy about our sudden incursion into 'their' territory. That had to be managed carefully, including several meetings.

Innovative dimensions

This was the first nationwide mini public of its type in Ireland and one of very few internationally of its type (it bears comparison in this regard to the Belgian G1000).

Unlike Fishkin-like deliberative polls, we had a number of control groups (as discussed above) that we feel gave our statistical findings greater robustness.

And we achieved what we were looking for – namely the influencing of the government's agenda relating to the establishment, design and operation of the Irish Constitutional Convention.

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Our initiative was all about the process, not about the content: i.e. we were seeking to show the merits of random selection and deliberation in processes of discussing constitutional reform.

Similar initiatives
- G1000 project, 2011–2012
  (http://participedia.net/en/cases/g1000-belgium)
- Constitutional Council in Iceland, 2011
  (http://participedia.net/en/cases/icelandic-constitutional-council-2011)
- Citizens' Assembly on Electoral Reform, Ontario
  (http://www.citizensassembly.gov.on.ca/)

This report is available for download at **www.PE2020.eu**

Geographical scale

H2020 Societal Grand Challenge(s)

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Secure societies – protecting freedom and security of Europe and its citizens