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spokes, noun, plural of spoke
1. One of the rods or braces connecting the hub and rim of a wheel.
2. *Nautical* One of the handles projecting from the rim of a ship's steering wheel.

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Andrea Bandelli

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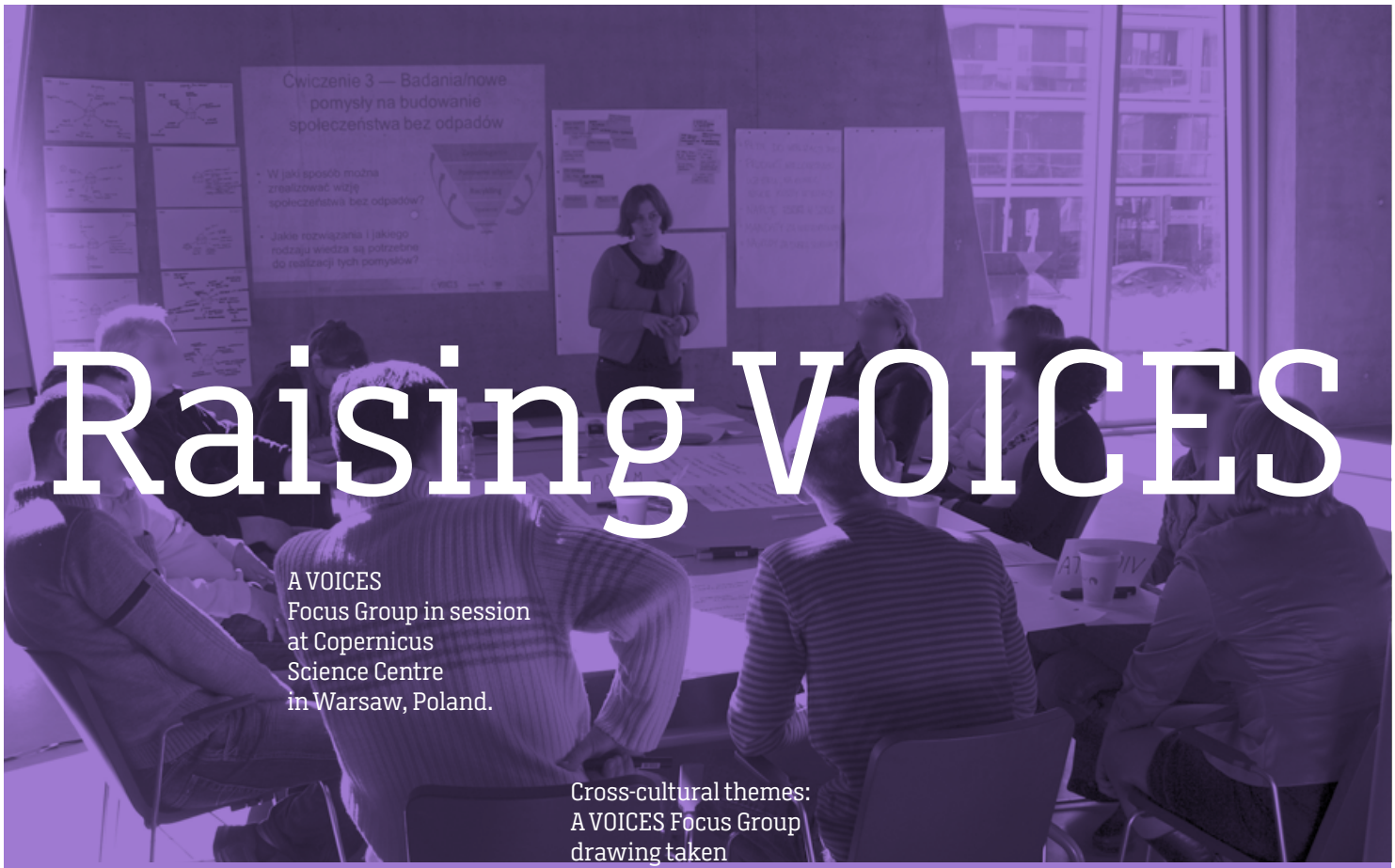
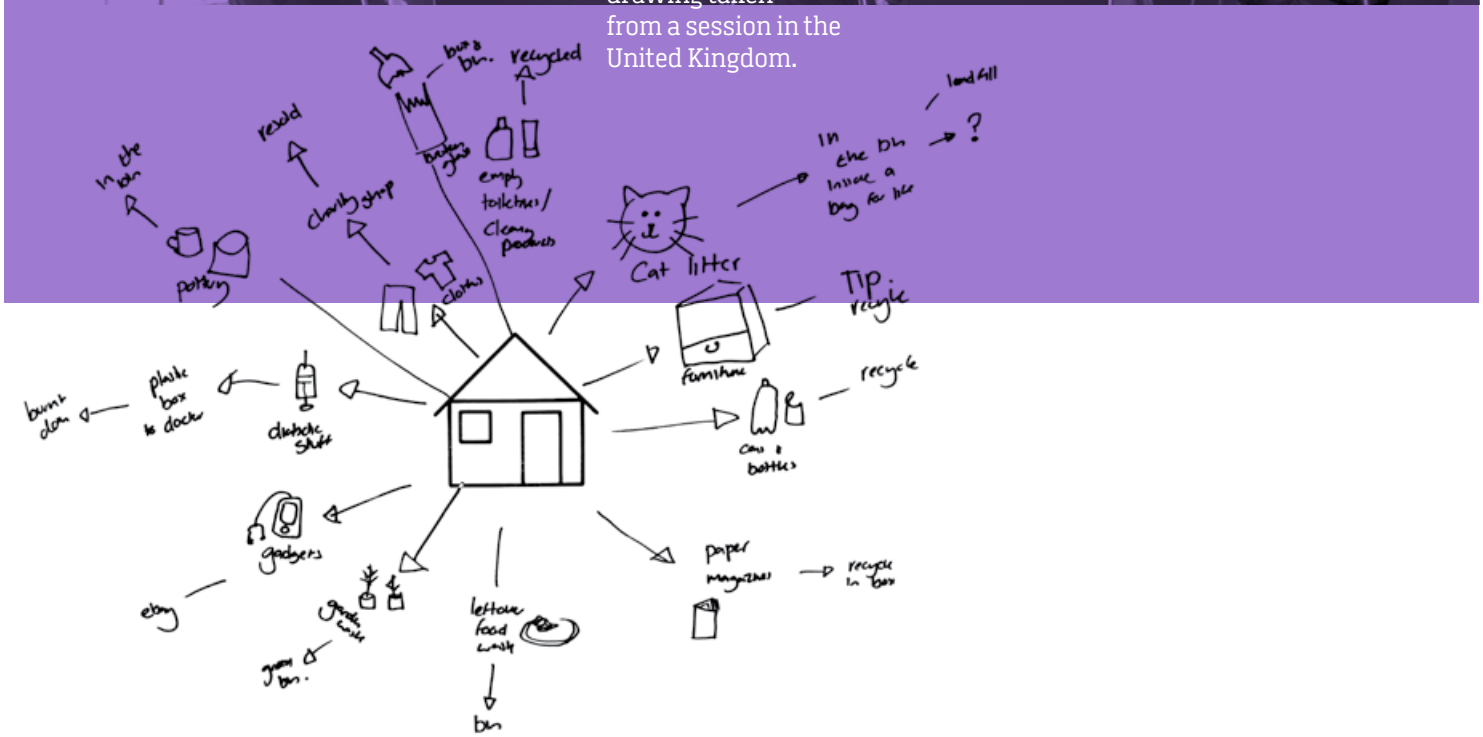


A VOICES Focus Group in session at Copernicus Science Centre in Warsaw, Poland.

Photo: VOICES project



Cross-cultural themes: A VOICES Focus Group drawing taken from a session in the United Kingdom.

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Ushering in a new era for science centres and policy making

They've evolved over the past two decades from experimental niche activities to widespread initiatives slated to impact European policymaking. Ecsite's European Projects have now culminated with VOICES where science centres and museums are taking on the role of public opinion brokers in European policy. VOICES has spoken and the EU is listening.

A short history of progress

Science centres and museums have increasingly profiled themselves as forums where visitors can learn, discuss and even deliberate about matters related to science, technology and society. EU-funded projects are a big part of this evolution.

Ecsite members have been engaging at the policy level since the early 1990s with European Commission-funded projects such as Cipast, Meetings of Minds, Nanodialogue, Decide, Dotik, and others. The projects demonstrated that science centres and museums were ready to play a significant role as facilitators of public dialogue and deliberations on contemporary – and often controversial – scientific issues.

Ecsite's European Projects are also engines of innovation in the science engagement field because they illuminate new ways to engage visitors, reach new publics and create lasting relationships among institutions. Evolving and learning are two major objectives.

Inching closer to policy

Public opinion on science and technology should be "…heard and incorporated into decision-making processes." This resolution, part of the Cape Town Declaration signed at the Science Centre World Congress in 2011, is not only a goal – which Ecsite's members pursue through EU projects and in many other ways – but is also a responsibility that Europe's science centres are taking seriously.

Ecsite's EU projects were often missing an important component, however: Direct links to policy making processes. Projects focussed more on sewing outcomes into the fabric of museum life; making a concrete impact on policy was left to other parties, usually project funders, with little or no role for science centres and museums.

Science centres and museums are now plugging in to the policy process in a very real way. For example, the Polka project defined new policies for treating rare diseases using input from over 3,000 citizens – public input gathered in part by science centres – on genetic research, access to treatment and genetic testing.

Another project, PLACES, is a platform where over 60 European cities are defining local science communication policies and plans, with science centres as the moderator between research, citizens and policy.

Hearing VOICES

Enter VOICES, a ground breaking pilot project to formally involve citizens from all European countries in defining research and innovation priorities for the EU's new Horizon 2020 framework program about urban waste. This project, the first of its kind, was carried out in 27 countries and involved consultation of 1,000 citizens.

VOICES was designed as a pilot project to learn about a process which is set to become more and more en vogue in the future. And with the advent of VOICES, public discussions about science and technology are no longer confined within the walls of science centres but have implications for how science and technology are embedded in society.

"Science centres have a major role to play in facilitating multi-stakeholder meetings, where lay citizens convene together with other local players to integrate multiple perspectives in policy making," says Jacqueline Broerse, Director of the Athena institute at the VU University in Amsterdam, Netherlands – the institution responsible for designing the VOICES focus groups and analysing VOICES outcomes in conjunction with Ecsite.

Gilles Laroche, head of the Ethics and Gender unit at the European Commission, agrees. "It's absolutely crucial to communicate the results of VOICES to the member states and at regional level. The Commission has a key role to play, but we need the continued commitment of Ecsite to provide trustworthy spaces for meaningful

interactions with citizens," Laroche says."VOICES has demonstrated that science centres can play an important role as interfaces between science, policy and society due to their capacity to connect life and culture in the city, with regard to science."

Evaluation of the project shows that the public supports and is eager to engage in activities like VOICES. For example, 99 percent of participants were satisfied with the VOICES consultations and 98 percent felt they had the opportunity to say all, or most, of what they wanted to say. The vast majority of participants, 92 percent, felt consultations were aimed at the right people.

This overwhelming success also carries responsibility: 83 percent of those consulted in VOICES expect to be informed about project outcomes. Feedback about participation in policy making should be a two-way process, not only the final communication of the results. This is an area where science centres and museums are expected to play a major, strategic role.

Make way for citizen science

To continue on their trajectory as influencers of policy, some science centres will need to adjust their approach to communicating with the public; VOICES consultations were not occasions to showcase science centres' wealth of knowledge, but to tap into the expertise and ideas of citizens.

"The VOICES events made clear that science centres are real meeting places. But science centres often feel a need to 'teach something' – something they decide, and they tend to do it in a rather top-down way," says Elisabetta Tola, science journalist at Formicablu, and curator of the VOICES website.

Jacqueline Broerse agrees. "We had a few instances where the moderators of the events, staff of the science centres, were 'pushing' extra information in a didactic way, because they saw the event as an opportunity to educate the public," she recalls.

"In the [VOICES] event I attended, several people said 'I've learned a lot.' It was not about the 'official' knowledge that was given at the museum, but the event became a place to learn about what the other participants were bringing into the conversation," says Gilles Laroche. "This is a new role for museums, where you learn from others who have specific knowledge in their daily life, and who are willing to share it."

Becoming forums for public dialogue does not negate the traditional educational role for which science centres are known and loved all over the world. But it does mean adapting the skills and mind-sets of science museum staff so as to value visitors' knowledge – their experiences, opinions and ideas. The role of the science centre, then, is to enable dialogue between participants, equalizing the playing field so facilitators and citizens can bounce dialogue back and forth[1].

The next wave

VOICES' citizen consultations have gathered remarkably more information and exceeded the European Commission's original goals for the project.

VOICES represents the first time the Commission made a commitment to integrate citizen-inspired outcomes in its research and innovation policy agenda and institutional governance process. European citizens showed that they possess a great deal of knowledge, intuition and civic responsibility, from which community-based solutions and social innovation may most usefully emerge on challenging subjects such as urban waste and beyond.

"From the analysis of the results we are gaining insights about social sciences, about policy, about legal aspects, all kind of things that were not envisaged at the beginning of the project," says Gilles Laroche. "So how do we exploit that now?" he asks. "The experience with VOICES will be fundamental for promoting public engagement in future EU funded research and innovation projects. It has already had a clear impact in developing the upcoming 2014-2015 calls for research proposals in relation to urban waste. We can do much more, however, and this is what we have in store for next year."

The best way to exploit VOICES outcomes may be to bolster in-house capacities of science centres to process and analyse insights gathered through citizen consultation. Professional development in theoretical and analytical skills would allow science centres to be valuable – and autonomous – interpreters of knowledge gathered from citizens. (A Pre-Conference Workshop at this year's Ecsite Annual Conference in The Hague, Netherlands, will address some of the training issues identified by VOICES. – Ed.)

This professional training would no doubt contribute to the next wave of Europe-wide policy collaborations by reducing project costs and having more impact at the science centre's local level.

But this is already happening.

"I learned that Ciência Viva in Portugal and Parque de las Ciencias in Spain are both using the materials developed for VOICES to gain new skills and organize local focus groups with citizens on other topics. This is precisely the kind of 'spin-offs' that are needed to build local capacity," says Jacqueline Broerse.

VOICES' next wave is apparently well under way. ¶

Views, Opinions and Ideas of Citizens in Europe on Science (VOICES) is a yearlong, Europe-wide citizen consultation exploring the concept of waste as a resource. The results are being used to shape Horizon 2020 research priorities with regard to urban waste management. voicesforinnovation.eu

VOICES in numbers

- 1.270.000 words translated
- 1.000 European citizens
- 557 EU municipalities
- 350 ideas
- 300 hours of consultation
- 100 focus groups
- 33 locations
- 27 EU countries
- 22 external experts
- 8 research directions

1 One example of how this can be done in a structured way is described in the article "Technology of imagination: a card-based public engagement method for debating emerging technologies" by U. Felt et al. (2013). The research group at the University of Vienna used a modified version of the "PlayDecide" format as a public engagement exercise and a qualitative research tool to understand how citizens develop and negotiate their opinions on emerging technologies, moving between individual and collective positions.

with the advent of VOICES, public discussions about science and technology are no longer confined within the walls of science centres but have implications for how science and technology are embedded in society.

www.voicesforinnovation.eu

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VOICES aligns with EU strategy: Eurobarometer

The greatly-anticipated final outcomes of VOICES were released on November 15 2013. Twenty-seven country reports and one overall EU report present VOICES' key findings, showing for the first time on a truly European scale how citizens' opinions can be systematically incorporated into EU research policy.

In an interesting turn, the European Commission released the results of its latest high-profile Eurobarometer survey the day before the VOICES reports were launched. The poll shows that the majority of European citizens feel research and innovation should incorporate public dialogue, but that citizens do not feel adequately informed about the science and technology topics of the day. The European Commission encouragingly cites VOICES as a key part of its strategy to better engage citizens with research.

Here's a peek at some of the main findings from the VOICES reports:

1. **VOICES validates the EU's current priorities of research and policies on urban waste**
   Citizens want:
   - less packaging, and more efficient packaging materials. They want to see 100% biodegradable packaging, and plastics that can be fully recycled without loss of quality.
   - products which are easier to reuse and recycle.
   - manufacturers to be regulated more heavily, taking responsibility for the lifespan and recycling of their products, and ending planned obsolescence.
   - more recycling points are needed at convenient locations.
   - incineration plants to be used as much as possible to produce heat and energy.
2. **VOICES also proposes new ways to strengthen current research**
   - European citizens feel convenience in the household is crucial. This is a part of waste management often neglected by research. There is a clear need for devices to facilitate sorting and compacting in the home ("smart bins"), or technology which allows waste to be used as a resource in the household.
   - Citizens want to feel the benefit of waste separation. This can be done by making incentives, deposit systems and reward schemes more widespread.
   - Education and communication are crucial. Citizens are largely unaware of what happens to their waste, and would feel more engaged in the process if knowledge was more widespread.
   - Technology can be a motivation to recycle in itself. Citizens feel that systems using chips, electronic tags and apps can help to empower people in the recycling process.

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GET THE FULL VOICES REPORTS AT: www.voicesforinnovation.eu