Seven principles for public engagement in science and innovation policymaking

A guide from Nesta's Inclusive Innovation team

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What are the greatest challenges facing the world today? The UK government, in its industrial strategy, focuses on mobility, clean growth, ageing and growing the machine learning and data-driven economy.

Research and innovation in these areas will affect all of our lives and yet the people involved in designing, funding and regulating these technologies come from remarkably similar backgrounds. Here are just two statistics: only 15 per cent of scientists come from working class backgrounds; and in the US, children from the top 1 per cent of richest families (by income) are ten times as likely to have filed for a patent as those from families in the bottom half of the income distribution.

So why should researchers, innovators and those whose jobs it is to regulate technology engage with people who aren't like them on topics like research and innovation?

1. **To give those in power a broader range of potential futures to aspire to** - Innovators are expert storytellers, they have awfully loud voices and their visions of the future are rarely challenged by the media. The stories that innovators tell shape the laws that politicians pass, the funding they make available and the rules they design to govern new technologies. Public engagement can offer policymakers alternative, more inclusive sets of narratives to aspire to.
2. **To encourage researchers and policymakers to think about broader social, political and ethical issues** - 'AI is empowerment', announced Google, as it launched its automated call centre software, which could disrupt an industry that employs around one million people in the UK. Innovators can often neglect the wider social impacts of their work, which is why public engagement can be a useful corrective. Because when the public get a chance to tell experts what they think about science and innovation funding, through public dialogues for example, they express strong views about the need to prevent negative effects of innovation, from job losses to a loss of privacy. Governments need to get much better at planning to address the disruption that innovation can bring, and public engagement can help them do this.
3. **To improve research and innovation** - Innovators are overwhelmingly male and are also likely to be from predominantly wealthy backgrounds. Theories of collective intelligence and cognitive diversity show that more diverse groups are better at solving problems. This lack of diversity also means that researchers often focus on solving the problems of people like

them. Research and innovation hold many promises, but its exclusivity may be holding them back.

4. **To make sure the benefits of research and innovation are shared widely** - Do people trust innovators to create a future that they want? In a recent survey, Demos found that only 16 per cent of the public believe that technological benefits will be shared evenly across society. Alongside efforts to increase diversity in terms of who becomes an innovator, which take a long time to bare fruit, increasing the interactions between innovators, policymakers and the public could be a necessary and urgent step to addressing this issue.

Developing principles for public engagement

Over the last year at Nesta, the Inclusive Innovation team has focused on public engagement as an important way to spread the benefits of science and innovation policy. Many organisations and individuals have been very generous with their time in helping us to understand both the history of public engagement in the UK and current challenges, from the Research Councils and UKRI to the Wellcome Trust and Involve. A complete list of those who helped us create this document can be found in the acknowledgements section. Our own work builds on the work and thinking of those working in public engagement across the UK and as a result of our observations and learning we would like to offer seven principles that could guide public engagement with science, research and innovation in the 21st century.

Who are these principles for?

Public engagement means different things to different people. In this article, when we talk about public engagement, we have three types of people and activities in mind.

This guide will be most useful for:

- **Government ministers and civil servants** - If your job is to help set the goals and direction of science, research and innovation policy, whether that's through funding programmes or government strategies, or if it's your job to develop new rules and regulations to govern emerging technologies and innovations.
- **Research funders -** When developing and rolling out new funding programmes for research and innovation.
- **The private sector -** When making decisions about what products or services to develop and for which users. An example might be driverless

cars: what will the impact of this new product on society be, who will gain and who will lose out, how should it be tested?

This guide is not directly aimed at:

- Scientists and researchers who want to improve the way they communicate their work to the public - think a Brian Cox documentary about the Wonders of the Universe or a science festival where children can learn about the latest scientific discoveries.
- Researchers who want to involve the public in research, for example as citizen scientists or involving patients in health research.
- Researchers and institutions who want to demonstrate the impact of their work[PDF].

So when we talk about public engagement throughout this article, we mean two specific things:

Firstly, we mean involving a much broader group of people in discussions and debates about what science, research and innovation are for. That might mean, for example, engaging with a wide group of people when setting strategies, challenges and thus funding priorities.

Secondly, we mean involving a much wider group of people in discussions and debates about new and emerging technologies - their governance, their regulation and the wider social, political and ethical issues that could arise from the way that they are designed and implemented.

Towards a new model of public engagement with research and innovation

As technological change speeds up, we think that it is time for the UK government to take the lead in developing a new model of public engagement in decision-making about research, technology and innovation. We think that the launch of UKRI, and the Sciencewise programme moving into this new body, is a great opportunity to do this as it provides the space to rethink the role that the public should play in shaping science, research and innovation.

To kickstart the debate, Nesta has created seven principles that could guide public engagement with research and innovation in the 21st century. We welcome all comments and suggestions that others have and will update the draft in due course.

The seven principles have been split into four categories - organisation, purpose, participants, methods.

We believe that public engagement should be:

Organisation

1) Supported by those with the power to change things

In an inclusive society, public engagement should be built into the decision making processes of government, funding bodies and innovators. Yet those in power are often unconvinced by this. A fundamental change of mindset is required by those in power. 'This way of working is deeply countercultural for organisations, and involves 'letting go' of many cherished ways of working,' Paul Manners, Director for the National Co-ordinating Centre for Public Engagement told me.

Idea: Send the UK's science, research and innovation leaders on a nationwide tour. It is difficult to convince ministers and other leading figures in the world of science, research and innovation of the value and power of public engagement through reports and opinion pieces alone. To address this, a delegation of leaders should follow the example of Andy Haldane, chief economist at the Bank of England, and go on a nationwide tour, to meet ordinary people and talk about their work on research and innovation with them. They will see that people far away from the halls of power have very sensible, nuanced views when it comes to difficult, technical issues, and it may well convince them of the value of supporting public engagement more than any report ever could. In line with principle seven, this should ideally be facilitated by expert brokers.

Idea: Support learning and development for those in leadership positions in research, funding and regulatory bodies on why and how they can engage the public. A professional development programme for public engagement professionals, similar to the Global Innovation Policy Accelerator collaborative development programme, would enable policymakers to expand their skill sets and develop stronger connections with peers worldwide.

Idea: Appoint 'public champions' to funding and regulation bodies, to advise on the most appropriate methods and timings to engage the public, whether that's a public dialogue or an online debate, a survey or a piece of participatory theatre. Public champions should be skilled mediators, who are experienced in working between communities and policymakers on issues of science, research and innovation.

2) Open to experimentation

Governments rely on a set of tried and tested methods to engage the public and there is little experimentation in the field. For example, almost all public engagement work is done offline, with very little money spent on digital methods. Also, public engagement that is not led by institutions tends to be given less weight in the policymaking process yet evidence shows that more citizen-led approaches, from arts-based engagement to the use social media, can highlight public concerns that are missed by institutional led engagement.

While in many cases the challenge is to embed tried and tested methods of public engagement into the working practices of governments and research funders, these organisations should also support experimental and citizen-led approaches to public engagement. To further support this kind of work, those who engage with the public should ask practitioners to consider how best they can document the impact of their work, as a way to both generate and share lessons for others and to persuade those in positions of power of the value of experimental and citizen-led approaches to public engagement.

Idea: Support the development of a diverse range of public engagement innovators - Governments and research funders should support the development of a diverse range of organisations that are experimenting with innovative and citizen-led approaches to public engagement. One way to do this might be through a public engagement accelerator programme which combines small grants, bespoke support and partnering opportunities for innovators and those who need to engage the public on questions of science, research and innovation.

Purpose

3) Designed with a clear goal in mind

Engagement should be about shaping priorities and decisions rather than simply a consultation in order to gain the acceptance of the public for a new technology or strategy. Any public engagement initiative should start with a clear set of questions in mind: what do you want to ask, and why? This is important because only with a clear idea about this will you be able to evaluate the process and outcomes properly.

Idea: Develop a public engagement scorecard - all major government investments in research and innovation should be required to clearly state how stakeholders and citizens contributed to the evidence collected for the policymaking process and be scored against a common framework of public participation in policymaking (thanks to Simon Burall from Involve for the inspiration for this idea).

4) Sensible about measures of success

The outputs of public engagement exercises are often reports, which are used to attempt to influence institutional policy. However, public engagement can do much more than this. Just as important as the formal, documented outcomes should be how the process itself influences participants and leads to open and surprising discussions about research and innovation.

Participants

5) Targeted at specific audiences and communities not the general public

When trying to engage everyone, initiatives usually end up engaging an interested and motivated group. It's also really hard to design public engagement interventions that aim to involve a broad, diverse set of people. When trying to do public engagement, you need to be thoughtful about who you're trying to engage, why, and what that means for how you actually do it. 'Who are the public?' is a useful place to start.

One way to target people might be to think about people with different perspectives. For example, public engagement usually seeks to be representative, in terms of the make up of the UK population, but doesn't often seek to be inclusive in terms of different outlooks, such as political views or optimistic versus pessimistic views about technology.

Idea: Explore how digital tools can be used to promote informed and inclusive debate -The internet offers a huge number of possibilities for public engagement, yet online tools are rarely used to engage the public in discussions and debates about research and innovation. This might be because digital tools usually only manage to engage interested and motivate people and it can be difficult to discuss complex topics in a nuanced way online. Yet digital tools offer a number of potential benefits, from an ability to target specific audiences to allowing more timely engagement on urgent questions. They could also, potentially, allow governments and research funders to engage with many more people than traditional public engagement initiatives and allow organisers to capture and analyse the data in new and interesting ways. Funders should support the use of digital tools in their public engagement work, both through integrating digital tools into traditional engagement exercises, where appropriate, and experimenting with online engagement initiatives.

6) Beneficial for participants

When governments engage the public on a given topic, they should always consider what participants get out of an exercise. Sometimes, that might be about crafting an engaging experience, such as 10:10's 'heat seeking quest'. At other times, this could be about trying to empower participants, for example,

giving them the skills to act as an intermediary between their communities and policymakers. Models such as community organising are under explored and could be piloted.

Methods

7) Informed and facilitated

Most people have probably never had the time or inclination to form an opinion on technical questions, such as 'how should the government regulate the use of data?' A survey on this topic might lead to the conclusion that "the public doesn't care about what companies do with their data," and yet, informing the public about the potential negative consequences of a data breach might lead to a very different discussion. When professionals engage the public it's important for them to understand the need to dig deeper, to explore different views, to provide information where necessary and then to use judgement to interpret findings.

Public engagement as a path to inclusive innovation

Our former faith in trickle-down innovation is giving way to an understanding that research and innovation need much more inclusive means if they are to yield inclusive ends. Public engagement is an important way to achieve this, and we hope that these principles can contribute to a debate on how the UK can lead the way in developing democratic, responsive, and inclusive research and innovation policy that is up to the task of addressing the needs of society.

What is Nesta doing?

At Nesta we are currently carrying out a range of public engagement projects which seek to experiment with various methods of public engagement.

- Experiments - we are running a number of experiments on the use of digital platforms for public engagement, to test how digital approaches can lead to both informed and inclusive conversations and also on how traditional public dialogues can be made more engaging.
- Supporting innovators - Our Everyone Makes Innovation Policy programme has supported five organisations to test creative approaches to public engagement, from storytelling and games to art and theatre.
- Promoting debate - We have commissioned a series of ten essays from leading thinkers on key issues for public engagement with science and innovation today.

Get in touch

If you would like to discuss any of this further, including potential partnerships please get in touch: tom.saunders@nesta.org.uk

Acknowledgements

These principles have drawn heavily on the knowledge, research and practice of public engagement practitioners in the UK, from academics to government officials and research funders.

In June this year (2018) Nesta ran a public dialogue with Involve on the use of AI in health, and I benefited from many discussions with Simon Burall and Remco Van der Stoep about both the theory and practice of public engagement. In May we organised a public engagement event and I benefited from hearing informative presentations from Jack Stilgoe (UCL) and Imran Khan (Wellcome Trust). I have also attended and learnt from many external events over the past year, most notably a round table organised by Imogen Parker and Reema Patel who are setting up the Ada Lovelace Institute at the Nuffield Foundation. I have also learnt a huge amount from working closely with the grantees of our Everyone Makes Innovation Policy Programme.

The literature on public engagement is vast and mentioning just one or two works runs the risk of alienating other authors. But facing that risk head on, a number of works have done a lot to shape my thinking: *What's this public 'engagement' with science thing then*? by Alice Bell is a great place to start and points to a number of useful resources. *Why should we promote public engagement with science*? by Jack Stilgoe and James Wilson provides an academic perspective on the state of public engagement; Deliberative Public Engagement, by Involve, is a fantastic resource on the when, why and how of involving people in decision making. For government resources, see the *Science Communication and Engagement* (PDF) report of the House of Commons Science and Technology Select Committee. See also the Sciencewise report: *The Government's Approach to Public Dialogue on Science and Technology* (PDF). The website of the National Centre for Public Engagement is full of useful resources and how to guides. One starting point might be *Embedding a Culture of Public Engagement*. *(PDF)*

The final set of principles have also benefited from detailed comments from Simon Burall (Involve), Jenni Chambers (UKRI), Imran Khan (Wellcome Trust), Paul Manners (NCCPE), Peter Mcowan and his team (Queen Mary, University of London) and Jack Stilgoe (UCL) and also Nesta colleagues: Theo Bass, Madeleine Gabriel, Alex Glennie, Jen Rae and Ben Reid and Kirsten Bound.