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Public Engagement Map

Report to the Science for All Expert Group

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Helen Featherstone, Clare Wilkinson, Karen Bultitude

Science Communication Unit, University of the West of England, Bristol

1 Introduction

1.1 Objectives

There is currently much engagement activity happening across the broad terrain of the sciences (*the physical, biological, engineering, medical, natural and social disciplines, and research in the arts and humanities)*, but largely in an organic and piecemeal way with limited sharing or coordination between different sectors or disciplines.

The proposed map offers a way of seeing the system as a whole, so that it is possible to focus on the key areas where strategic intervention would make a positive impact. The map therefore provides an overview of the key features in the current landscape, and is intended to:

- Provide a snapshot of the extent and scope of engagement activity currently underway in different sectors;
- Present a tool to identify gaps / opportunities for increase 'join up'
- Help inform whether more in-depth mapping could usefully be commissioned

In order successfully to map public engagement activity in England a framework was developed (the reader may find it useful to review the full document for clarification of terms used in this report. The report is available by contacting science.communication@uwe.ac.uk). The framework provides a structure to begin to answer the following questions:

- Who is involved in public engagement?
- What form does public engagement take?
- Where does public engagement take place?
- Why does public engagement happen?
- How does public engagement happen?

2 Methods

The framework for Public Engagement identifies five sectors within which public engagement takes place: Academic, Industry, Cultural sector, Third sector and Public sector. To date, desk research and interviews have been conducted for Industry, Cultural, Public and Academic sectors. The Third sector had to be omitted due to time limitations.

The desk research has consisted of analysing mission statements /strategies and public engagement case studies for a small sample of institutions. Each institution's statements /strategies and case studies were coded using the framework and entered on an Access database. The desk research has primarily relied on institutional websites and materials. Only activities which are current or have occurred within the last three years have been included. It has also been mindful of the key aspects of the Science for All Group (the physical, biological, engineering, medical, natural and social disciplines, and research in the arts and humanities) and as such does not incorporate public engagement activities occurring in some parallel settings, for example Arts Council, England.

The interviews have been conducted with a small number of key players within these areas. The interviewees were selected for their insight and ability to provide an overview of their sector. The interviews were recorded and will be transcribed. The coding framework used to analyse the interviews will follow the public engagement framework.

The sample size is necessarily small because of the limited time available for undertaking the research. Despite the small sample size there are some emergent trends which merit presentation here and suggest areas for further investigation in the future.

3 Observations – Science Industry Sector

Desk research was undertaken to identify networks for the science industry. This was based on the need to focus on the wider sector support for PE rather than working at an individual company level. As such the focus was on how the science industry's existing networks feature PE in the services, support and training they offer. Over 60 networks were identified and a randomly selected sample of 15 were explored in further detail. The website of each network was reviewed and searched for the term "public engagement". The mission statement of each network was analysed for evidence of a commitment to PE.

The networks identified by this search were largely single discipline, regional organisations which displayed little obvious commitment to PE. The wider list of networks was dominated by the biosciences. The networks for (bio)science industry focused their attention on building links between industry and academia and providing support for science-based start up enterprises to bring about economic growth in an area. BioDundee is a typical example:

> "BioDundee is a partnership between the public, private and academic sectors. Its mission is to build the strength of the life sciences sector in Dundee and Tayside internally through partnership working, networking, knowledge and skills development, and externally promote and position the Dundee life sciences sector to relevant audiences as a centre of world class life science activity.[1]"

This does not suggest that (bio)science industry is not interested in undertaking PE activities but could be interpreted as evidence that a number of the networks within the (bio)science industry have priorities over and above PE at this time.

There were three industry networks which expressed commitments to engagement: The Food and Drink Federation (FDF), the Association of British Health-care Industries (ABHI) and North East of England Process Industry Cluster (NEPIC). These three organisations all exist to represent and speak on behalf of the specific sector with the ultimate purpose of creating economic growth for that sector. They all have a lobbying role and communicate with relevant government departments to influence relevant policy.

Alongside their lobbying roles, these three organisations also engage with the public. The Association of British Health-care Industries (ABHI) does this through the Medical Technology Group to engage with patients and users of healthcare products and technology. While the FDF does this more directly through two behaviour change campaigns: one to decrease chewing gum litter and another to increase public understanding of the Guideline Daily Amount labelling. The FDF also encourages its members to undertake PE activities and rewards them with the opportunity to win a prize in its Community Partnerships Awards. The award scheme has entries from both large multinationals (eg MacDonalds, Kellogs, Unilever) and Small or Medium Enterprises such as the Mid-counties Cooperative Society. There are six award categories: environment, local community; culture, media and sport; education; and workplace.

All the activities recognised by the award scheme were formed in response to community need and were extremely varied. They included staff volunteering time to build ponds, grant support for the development of a mobile youth club or sports club sponsorship. In other words the engagement undertaken by the food industries is not necessarily focused on engaging the public with food, but is primarily aimed at raising the profile of the organisation within the community it is located in.

[1] http://www.biodundee.co.uk/

In contrast to the FDF and ABHI, the North East of England Process Industry Cluster (NEPIC) has a strong commitment to formal education with the purpose of increasing the uptake of STEM subjects in the region.

> "Our Core Purpose: Develop and implement the strategy for raising the uptake of STEM (Science, Technology, Engineering and Maths) study across North East England; enhancing the perception of the process industry to attract and retain the best talent into the sector.[2]"

To achieve this, NEPIC, is the contract holder for both STEMPOINT and Science and Engineering Ambassadors.

The three examples highlighted here suggest that these networks do not necessarily undertake public engagement activities themselves but enable or encourage their members to undertake public engagement. The mechanisms to enable this take the form or rewards (e.g. award scheme) or support networks (e.g. STEMPOINT).

Another initiative in which industrial science partners are key contributors are the Science Cities. In 2004, the then Chancellor, Gordon Brown announced the introduction of Science Cities in England. The Science Cities were introduced to maximise the growth around the knowledge economy at a local level. There are six Science Cities in England: Nottingham, Birmingham, Newcastle, York, Bristol and Manchester. Each Science City has its own remit and strategy which is appropriate to local needs. The website of each Science City was analysed for evidence of commitment to, and delivery of, public engagement activities.

Not all of the Science Cities expressed a commitment to PE. Bristol, Manchester and York are the three Science Cities which have included public engagement in their mission statement. This commitment translates to action in quite different ways. For example, Science City Bristol fulfils its commitment to public engagement by working with existing events (for example, the Festival of Nature and the Festival of Ideas) and 'feeding' science into these events. Bristol has also funded three pilot projects aimed at families and school children. Science City York also taps into existing events: Café Scientifique and the York Science Festival (which is part of National Science and Engineering Week).

In contrast, Science City Manchester has a project called Manchester is My Planet which encourages citizens of Manchester to pledge to reduce carbon emissions. Birmingham and Newcastle meanwhile have both made commitments to develop and deliver public engagement activities in the future. The final Science City, Nottingham, has a number of resources for schools including Lab in a Lorry, an educational lab which students visit and video interpretation of the periodic table. It has no activities that attempt to engage the non-school public.

The lack of data captured at the network level forced the research towards an analysis of individual organisations. It is clearly impossible to analyse every STEM-based industrial organisation, so the STEM Directories[3] were searched. The STEM Directories are an online resource where providers of Engagement and Enrichment activities can advertise their services. This allowed the identification of organisations that are actively undertaking PE with schools in an organised and proactive manner. Using the search term "industry" in the STEM Directories resulted in over 60 hits. Many of these hits were umbrella or partner organisation (e.g. Engineering Education Scheme) or were organisations whose main business was engagement (e.g. museums) and were excluded from the search to pinpoint organisations whose main business was science research and development. This resulted in a sample of three, of which one (NEPIC) had previously been

[2] http://www.nepic.co.uk/education/teacher/primary/default.asp?qry=%9AAmB%81%88%C9H%F6%05aq%EBy%25%89JA%DD

[3] http://www.stemdirectories.org.uk/

analysed. The remaining two organisations investigated were Shell and BP. As Shell and BP are both oil / energy organisations it would be skewed to single them out to represent science industries as a whole. With this in mind two other multinational science industries with other disciplines were also analysed: Pfizer (health) and Orange (communications technology). The websites of these four were analysed as before: searching for "public engagement," "community engagement" and analysing the mission statements.

All four of these organisations implement some form of public engagement across the range from Telling to Involving. Orange encourage their staff to undertake volunteer work in their communities and go into schools to tell young people about the safe and responsible use of their technologies, this is branded as *Community Engagement* and is part of Orange's Corporate Social Responsibility activities.

Shell and BP both undertake significant education programmes through the provision of classroom resources (for example, downloadable activity packs) and activities (for example, a class visit or national competition). Both institutions also work in partnership with other organisations to facilitate their public engagement activities. These partner organisations can be cultural institutions (for example, sponsorship of a gallery in the Science Museum or Tate Modern) or regional organisations (for example, Scottish Forest Enterprise).

In contrast to Orange, Shell and BP, Pfizer undertake public engagement that Involves stakeholders. These stakeholders include: patient advocacy groups, Health Technology Assessment Bodies (e.g. NICE), NGOs, Healthcare Professionals, Think Tanks, Government, Pharmacists, and the public. Pfizer are clear that the contributions these stakeholders can make to their decision-making are beneficial. For example, "Increasingly we are building relationships with patient groups who are increasingly interested in working collaboratively with us to find new solutions to old problems.[4]" Pfizer are committed to undertaking a programme of ongoing debate and consultation with stakeholders.

One aspect of public engagement that industry routinely undertakes is clearly missing from this analysis: that of market research. Market research is a key element of any business and is used to better understand customers' needs and likely purchasing behaviours. It is also worth noting that because market research is critical to the success of any business the results of any research are frequently kept within the organisation. Further work to examine the processes and purposes of market research and how that compares to elements of public engagement would be useful.

Summary – Public Engagement by Industry

For much of the science industry there would appear to be two key drivers for public engagement: ensuring a future supply of scientists and ongoing financial growth. In response to the first driver science industry invests time and money on the provision of classroom support and raising company profiles. Classroom support is frequently undertaken through partnership working or the utilisation of support networks. Science industry organisations also increase their profile in an area by supporting community projects and encouraging staff volunteering. These types of engagement also support the second driver for much of the science industry. However, for the health sector, classroom and community support are not sufficient to ensure ongoing financial growth. If Pfizer is typical of its sector then PE also incorporates a more consultative approach.

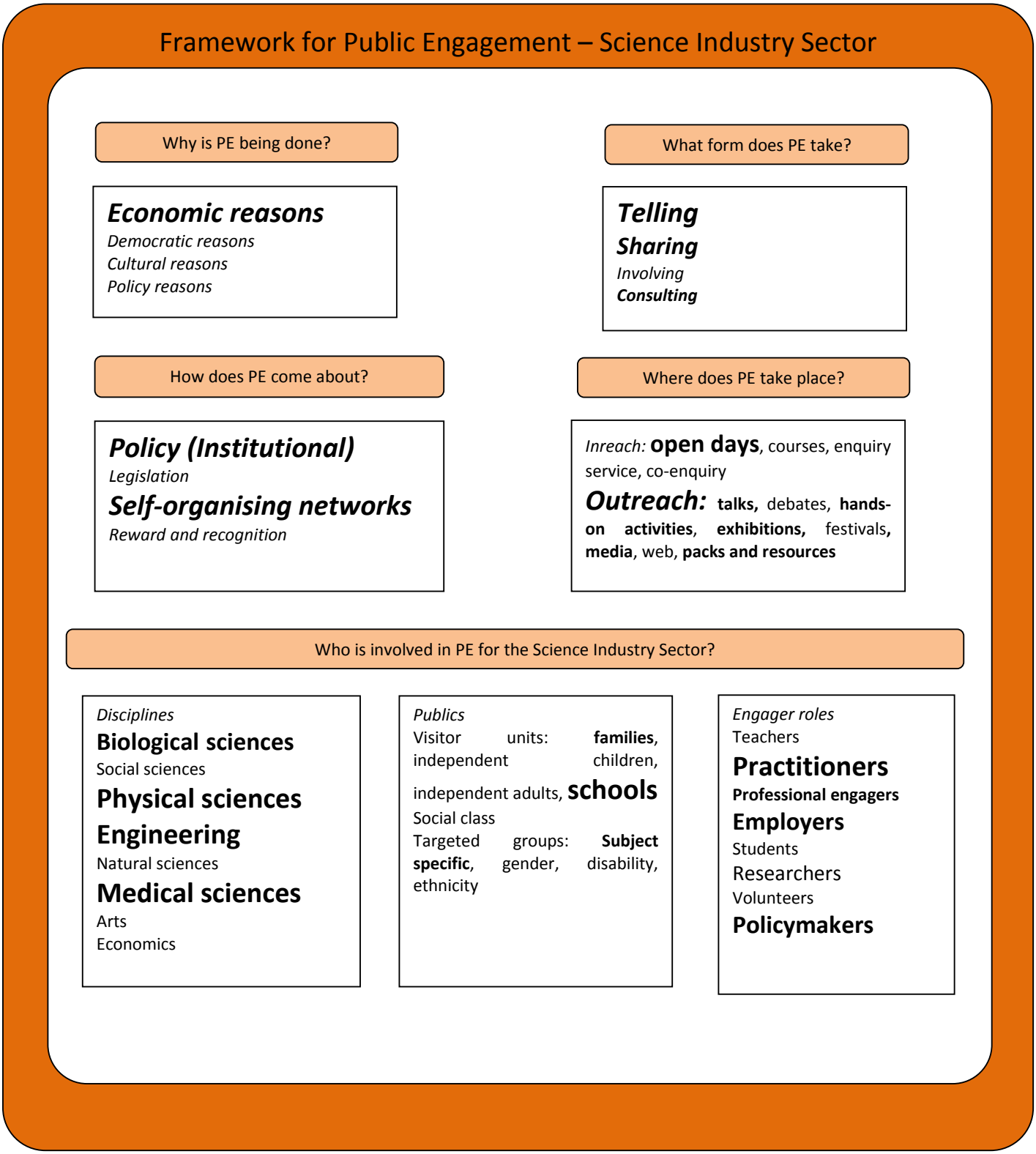
From this exploratory look at public engagement by the science industry it is clear that industry utilises umbrella organisations and support networks to deliver public engagement. Large, Small and Medium Enterprises make use of networks such as STEMPoints, Teacher Scientist Network, National Science and Engineering Week, Researchers in Residence, Go4SET, Engineering

[4] http://www.pfizer.co.uk/sites/PfizerCoUK/OurResponsibility/Pages/Stakeholderengagement.aspx

Education Scheme and the Industrial Trust. These schemes do not work exclusively with industrial partners and as such merit further investigation.

See Figure 1 for a pictorial representation of the map of public engagement for the Science Industry. This is necessarily only able to provide a suggested overview of public engagement for the Science Industry assuming that the organisations reviewed are representative of the wider sector.

Figure 1 - Map of public engagement for the science industry sector



4 Observations – Academic Sector

Desk research and telephone interviews were undertaken to review the mission statements of 29 institutions involved with the production of academic knowledge. The seven Research Councils, a random sample of eight Learned Societies and 13 universities were reviewed. Telephone interviews with the key figures in public engagement for Research Councils UK (RCUK) and the Economic and Social Research Council (ESRC), from here on referred to RCUK 01 and ESRC 01 respectively.

All of these organisations were undertaking public engagement and a variety of reasons were given, often explicitly. Looking across the sector as a whole a primary reason given for undertaking public engagement was economic: relating to the sectors' identified career paths. The British Academy and the Engineering and Physical Sciences Research Council (EPSRC) provide typical statements. The British Academy aims to "…inspire and develop future generations of scholars." While the EPSRC aims to "… provide trained scientists and engineers… thereby contributing to the economic competitiveness of the United Kingdom."

Cultural and democratic reasons were cited by just under half the institutions, with policy reasons being obvious the least often. Cultural and democratic statements used phrases such as "enabling society[5]" or "sharing and debating science[6]". Institutions that made clear statements about public engagement being for policy reasons included the EPSRC, whose science in society strategy states that PE will "ensure that EPSRC's thinking is informed by public views and by consideration of societal implications."

Without looking at a larger dataset there is a danger of overclaiming, however from the evidence collected, subsets of academia appear to have different priorities. For example, only two of the universities appeared to be undertaking public engagement to improve policies and policy related decision-making and to increase confidence in the regulation of policy and services. In contrast, all of the learned institutions were understandably concerned with improving policies and policy decision-making for their subject area.

From their mission statements it is clear the universities reviewed are concerned with engaging with their local communities however the purpose of this is unclear. It is possible that this community engagement has similar purposes to that of industry in that it is about raising the profile of the university within its locale. It was difficult to identify instances where public engagement was undertaken to inform research policy within the universities examined. This could of course be because this type of work is undertaken at a faculty, school or departmental level and would have been overlooked by this research. For example a number of departments are likely to be consulting with publics as an aspect of more traditional research collection techniques. However, many researchers in universities are funded by the Research Councils and it is for this reason that an examination of the Research Councils was also included.

There is diversity of activity across the separate Research Councils both in terms of purposes for PE and delivery of PE. RCUK 01 suggested that this diversity is a result of the individual personalities of research, discipline areas where controversy has increased the need for public dialogue (for example the medical and biological sciences), the need to recruit future scientists (for example the STFC doing open days and schools outreach), and the policy statements of the Research Councils (for example EPSRC has a Societal Issues Panel who look at the social and ethical implications of the research that they fund).

[5] Natural Environment Research Council
[6] Royal Society

With this diversity of activity it is therefore timely that Research Councils UK (RCUK) is currently refreshing its PE strategy[7]. RCUK is the umbrella organisation of the seven Research Councils and the RCUK PE with Research team manages cross-council public engagement. The vision for PE from RCUK

> "has three aims:
>
> - to enable society to value and have confidence in the research process and outputs;
> - for young people to pursue research careers; and
> - to create a culture where the research sector and researchers themselves, value public engagement as an important activity and an awareness of social and ethical issues informs research decisions and increases the societal impact of research.[8]"

A key objective for the PE with Research team at RCUK is to embed PE within the Research Councils and within research "When you start up a research programme you start to think about the PE that needs to go alongside that at an early stage," (RCUK 01). The vision for PE outlined above should reduce the diversity of PE activity amongst the individual Research Councils.

RCUK 01 also indicated the internal structures and mechanisms which are enabling PE to take place, she cited the Public Engagement with Research Group now reporting to the Research Development Group which is made up of research directors; the sharing of expertise across the Research Councils; and working in partnership to develop a concordat which sets out the principals for PE for other research funders to encourage them to take PE more seriously. RCUK 01 also highlighted the benefit of having a champion for PE at the very highest level in the guise of Alan Thorpe, Chief Executive of NERC.

Examining Research Council websites suggested that the individual councils are at differing stages of embedding public engagement. The BBSRC is well known as being a leader in the field of engaging the public to explicitly influence policy and decision-making for example, it has embarked on public dialogue on synthetic biology with the EPSRC through the British Market Research Bureau. The MRC, in partnership with BBSRC, has held numerous consultations on subjects including Stem Cells, use of animals in research and aging[9].

Certain Research Councils' PE activities are evidenced through their funding schemes and initiatives available for their researchers. STFC prioritises the recruitment of future engineers and scientists through its PE activities[10] and therefore funds activities in Science Discovery Centres. NERC makes it clear that it wishes to engage the public to increase confidence in the research it undertakes but it does not appear to use public opinion to inform the direction of its research. NERC provides a quarterly printed newsletter for interested members of the public[11] to achieve some of its engagement aims. This newsletter is now available online allowing readers to post comments in response to the science. The EPSRC funds significant amounts of PE activity through its Partnerships for Public Engagement scheme which "focus on explaining, demonstrating and articulating the results of recent and current research to the general public" [12]. The BBSRC also provides small awards for individual researchers to undertake PE activities[13].

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[7] RCUK 01
[8] RCUK 01
[9] http://www.mrc.ac.uk/Sciencesociety/Publicinvolvement/Consultations/index.htm
[10] http://www.scitech.ac.uk/PandS/Fund/Contents.aspx
[11] http://www.nerc.ac.uk/publications/planetearth/
[12] http://www.epsrc.ac.uk/PublicEngagement/ActivitiesAndFundingForResearchers/PartnershipsForPublicEngagement/ppeprocess.htm
[13] http://www.bbsrc.ac.uk/society/funding/public-engagement-awards.aspx

The ESRC wishes to influence public policy, raise awareness of social science research and recruit future researchers through its PE work[14]. The social sciences appear to see PE in a different light to the natural and physical sciences. According to ESRC 01, the reasons for this are twofold. In the first instance the social sciences "haven't had the catalyst of GM food or nanotechnology", where public opinion has been significantly different to that of the researchers. Secondly, and this is also relevant for research in the humanities, the subjects of research in the social sciences are people and are therefore intimately linked to the research. The concept of engaging the public with something they are already engaged is tied to the history of the field.

Academia, as with industry, makes use of existing public engagement networks and support mechanisms. The Researchers in Residence Scheme, STEMNET, Science Cities, Café Scientifique, National Science and Engineering Week, Festival of Social Science and Sciencewise were mentioned specifically. Festivals, competitions, and working in partnership were also tools used to undertake public engagement by academia. Institutions undertake a wide variety of outreach activities and considerably fewer inreach activities. This is reflected in that the institutions examined for this study all undertook telling and sharing public engagement with approximately half undertaking PE in the form of involving and a quarter using shaping public engagement.

Outreach activities were dominated by talks, debates, hands-on activities and exhibitions. Broadcasting and using the media was only used by a handful of the institutions reviewed. Inreach activities were less obvious but included open days, courses / training and a handful of instances of co-enquiry and enquiry services. Within the time available to undertake this study it was impossible to review every instance of public engagement activity. There are other instances of research of this kind and it is perhaps more appropriate to point the reader towards those for a more detailed picture. For example, Science and the Public: Mapping Science Communication Activities, prepared by Research International (2000) the Connecting Science report from the then BA (2005) or the recent CAISE report of 2009[15] detail such activities. ESRC 01 highlighted that for many in the social sciences, PE takes the form of a seminar, conference or discussion. However, in the most recent Festival of Social Science academics were invited to be 'innovative' and a more diverse range of activities and venues took place including exhibitions, theatre and going to new venues such as libraries.

It is unsurprising to find that the vast majority of delivery of public engagement activity falls to researchers and students in academia. These researchers and students spend their time engaging with independent adults and schools. Approximately half the organisations target their public engagement activities at groups with a subject specific interest, again, more detail on these activities can be found in the reports mentioned above.

Rewards and recognition take a variety of forms including prizes (Society of Biology), professional development opportunities (Institute of Physics), grants for students (British Psychological Society) and grants for public engagement activities (most of the Research Councils). However, this neglects to capture the personal and professional benefits of undertaking PE. The RCUK have commissioned research to capture and document these benefits (RCUK 01). RCUK 01 cited a couple of examples of research programmes which had changed as a direct result of talking with the public along with benefits such as widening the bank of industrial partners available to researchers. For the social sciences where the awareness of public engagement amongst researchers is diverse the support and motivation provided by the Festival of Social Science is a significant enabler for undertaking public engagement activities (ESRC 01). For some social researchers a significant driver is in improving the quality of the research. By engaging the public early in the research process the initial research questions can be improved (ESRC 01) and this aspect of undertaking public engagement is largely absent from the physical and natural sciences.

[14] http://www.esrc.ac.uk/ESRCInfoCentre/about/esrccontext/sciencesociety/index.aspx
[15] A full list and summary of these mapping reports can be obtained from the Science Communication Unit.

See Figure 2 for a pictorial representation of public engagement for the Academic Sector. This is necessarily only able to provide a suggested overview of public engagement for this sector assuming that the organisations reviewed are representative of the wider sector.

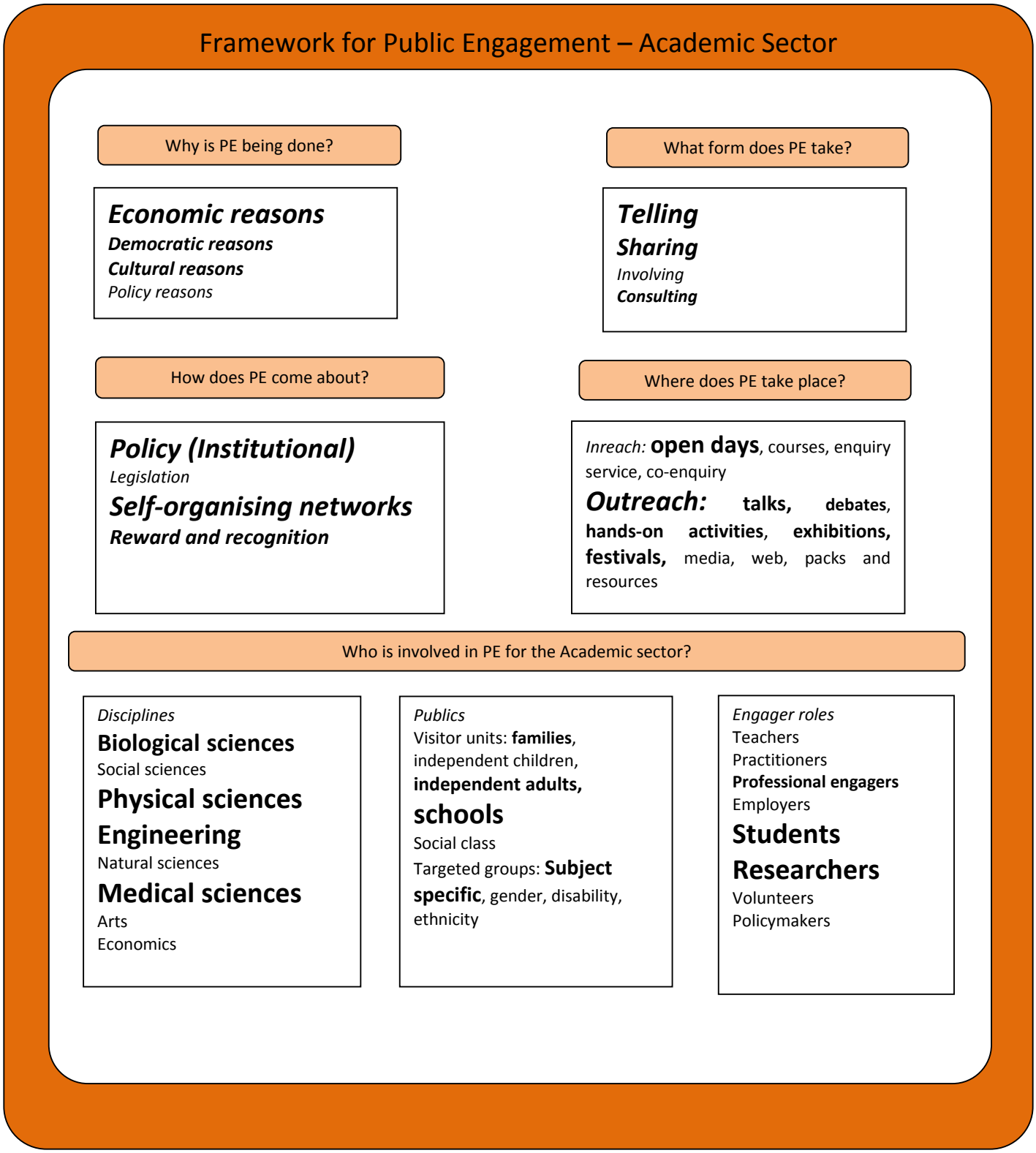
Summary – Academic Sector

The academic sector is primarily motivated by economic, policy and cultural reasons for undertaking public engagement activities. There are some differences between Research Councils and universities placing a greater emphasis on the economic and policy reasons and the learned institutions doing public engagement for cultural reasons.

There is a strong emphasis on telling and sharing activities, but there is a significant amount of consultation going on particularly in the biological, medical and physical sciences. The social sciences are in a slightly different situation due to the nature of the research in this area and the differing catalysts to stimulate public engagement. Academia makes extensive use of networks to support researchers in their public engagement activities.

There are institutional and financial drivers for researchers to undertake public engagement through the funding schemes of the various Research Councils. However the rewards and recognition are not well understood and work is currently underway to identify these.

Figure 2 - Map of public engagement for academic Sector



5 Observations – Cultural Sector

Desk research was undertaken to review the contribution that culture and leisure attractions make to engaging the public with science. There are, of course, a large number of these institutions and it was impossible to review each institution separately. The Association for Science and Discovery Centres (ASDC) was reviewed as it is an umbrella organisation which represents discovery centres nationally and across all disciplines. Café Scientifique and the British Science Association were reviewed as organisations which have national coverage. In order to capture the contributions of other informal learning institutions the Museums, Libraries and Archives was reviewed with specific case studies of the Museum of Science and Industry, National Museum of Science and Industry, Horniman Museum and the Natural History Museum.

The cultural sector has different justifications to industry and academia for undertaking public engagement activities. The mission and visions statements for these institutions focus on providing learning opportunities for the personal development of its visitors. The Museum of Science and Industry in Manchester provides a typical example, they aim to "Engage and inspire through the highest-quality informal learning opportunities" This element of personal enquiry and learning is also evident in the following statement from the Association for Science and Discovery Centres:

> "The UK's Science & Discovery Centres and Museums have at their core interactive exhibitions and programmes inviting visitors to explore, experiment, test, predict and discover science and the world around them. Laboratories, workshops, planetaria and interactive shows take the initial hands-on engagement a level further, encouraging active personal exploration and enquiry.[16]"

The cultural sector does not only undertake public engagement for the personal benefits of its visitors and audiences. Presumably motivated by the spending on science from the public purse, another driver for public engagement for the cultural sector is for making science accountable. Café Scientifique state they "are committed to promoting public engagement with science and to making science accountable.[17]" as does the British Science Assocation "The British Science Association exists to advance the public understanding, accessibility and accountability of the sciences and engineering.[18]" This suggests that the cultural sector is undertaking public engagement for democratic reasons.

A less overt, but clearly important, driver is a cultural one, that science is a key achievement of our society and is therefore worthy of being included in cultural establishments. The British Science Association makes this explicit in stating that "We seek to achieve that by connecting science with people: promoting openness about science in society and affirming science as a prime cultural force." The ASDC also states that science is a key element of our culture and as such it "advocates government recognition for science and discovery centres and for science as a cultural resource.[19]"
The cultural sector clearly has democratic and cultural justifications for engaging science and the public.

Unlike the industry and academic sectors, where engagement is secondary to economic growth or knowledge creation and teaching, the cultural sector's primary remit is that of public engagement. This means that for this sector the enablers of public engagement are embedded within institutional commitments and systems. The museums also cite the Every Child Matters

[16] http://sciencecentres.org.uk/reports/downloads/inspiration-engagement-learning-the-value-of-science-discovery-centres-in-the-uk.pdf
[17] http://www.cafescientifique.org/
[18] http://www.britishscienceassociation.org/web/
[19] http://sciencecentres.org.uk/about/index.html

programme[20] which is a government-initiated strategy "to make England the best place in the world for children and young people to grow up.[21]" The Every Child Matters programme is legally underpinned by the Children Act 2004. At the heart of the Every Child Matters programme is the belief that children learn best when supported by their families in out-of-school environments. It is these out-of-school[22] learning activities which the cultural sector also contributes to.

There is a great diversity of activities in the cultural sector. Unsurprisingly these are dominated by the exhibitions of the museums and discovery centres. However, alongside these core elements of public engagement provision which provide telling and sharing experiences, are series of programmes and events. These are frequently funded through separate means as a result of fundraising and sponsorship. Activities include talks / debates, festivals, media work, bursaries and prizes. This sector also provides training for researchers, scientists and engineers wishing to undertake public engagement work through the ASDC's Meet the Scientist programme and the British Science Association's Media Fellowship scheme. Alongside the training schemes, the cultural sector also provides opportunities for scientists and researchers to undertake public engagement activities. For example, the Café Scientifique network invites researchers to contribute to café events where the latest science issues are discussed by members of the public. Many of the cultural institutions host events for National Science and Engineering Week which again afford researchers the opportunity to undertake public engagement activities. Without undertaking further research it is difficult to record all the events and activities that take place in the cultural sector because of their frequently one-off or short term nature which in itself is a by-product of the funding schemes in operation.

While the cultural sector provides experiences across nearly all the disciplines, the activities are dominated by the natural, physical sciences and engineering with some prominent maths programmes through Science Discovery Centres. The biological sciences are generally catered for through aquaria, natural history museums and zoos.

The people involved in PE activities through the cultural sector are professional engagers, researchers and significant number of volunteers. Between them they target families, independent adults and school groups, with occasional interactions with policy-makers. The cultural sector also runs initiatives which target groups with an interest in a specific subject, disabled people and people from minority ethnic groups.

See Figure 3 for a pictorial representation of public engagement across the Cultural Sector. This is only able to provide a suggested overview of public engagement for this sector assuming that the organisations reviewed are representative of the wider sector.

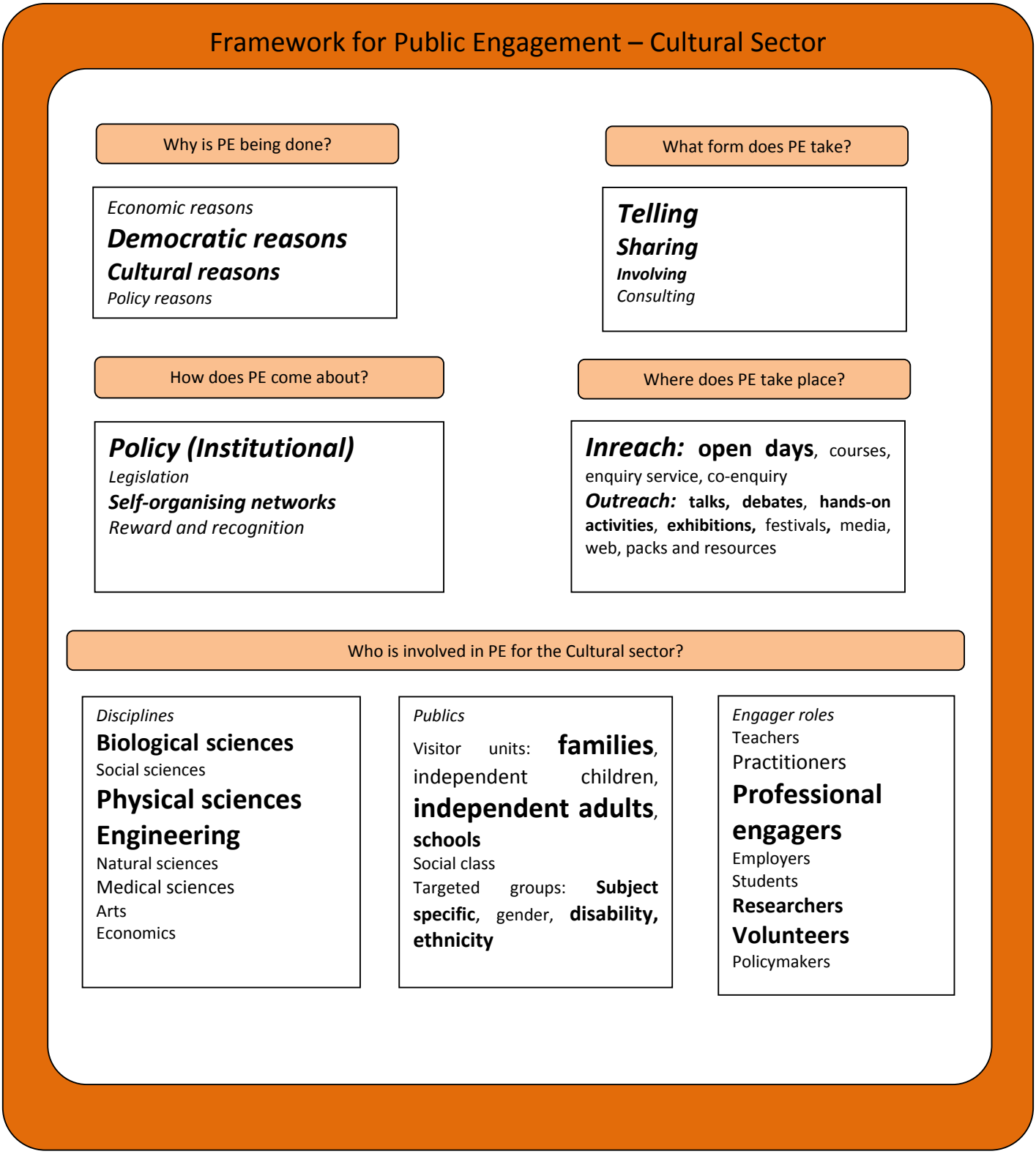
Summary – Cultural Sector

The cultural sector's drivers for undertaking public engagement are largely cultural and democratic. They take the form of telling and sharing activities but also include involving activities. The sharing and involving activities are largely funded on a case-by-case basis by the Research Councils, charitable funds and industry. These activities target families, schools and independent adults and are biased towards the physical, biological sciences and engineering.

The people involved with delivering public engagement are the staff in these institutions: professional engagers, researchers and a significant number of volunteers. This sector also provides training and development opportunities for researchers to undertake public engagement.

[20] http://www.dcsf.gov.uk/everychildmatters/
[21] http://www.dcsf.gov.uk/everychildmatters/about/
[22] Also known as informal or free-choice

Figure 3 - Map of public engagement for the cultural sector



6 Observations – Public Sector

In order to assess public engagement across the public sector desk research was undertaken to review a random sample of 10 relevant (ie science related) non-departmental public bodies (NDPBs) (see Appendix 2 for a full list of organisations). An interview with a representative of Involve was also undertaken and will be referred to as Involve 01. "Involve are public participation specialists; bringing institutions, communities and citizens together to accelerate innovation, understanding discussion and change.[23]" While not specifically interested in public engagement with science it was felt their understanding of public engagement in the public sector would provide insight into the more specific issue of public engagement with science. It is worth noting here that public engagement with the health sector was excluded from this research as it was being undertaken elsewhere and because public engagement with health is a well developed field in its own right.

The reasons cited by the public sector for undertaking public engagement were economic, policy-related and democratic. Economic examples included the Technology Strategy Board whose mission is to "promote and support research into and development and exploitation of science, technology and new ideas for the benefit of business, in order to increase sustainable economic growth and improve the quality of life" and the Agricultural and Horticulture Development Board (AHDB) which aims to "support the sector's long-term sustainability."

The improvement in policy and policy-making and increasing confidence in regulation were drivers for the public sector particularly those where government policy has to respond to a rapidly changing environment. The Environment Agency, Committee on Climate Change and Renewable Fuels Agency all include the public in decision-making around UK responses to climate change. The Human Fertilisation and Embryology Authority (HFEA) is the regulator of fertility treatment, also providing information and advice and working with stakeholders. It is this ability to influence policy and decision-making that Involve 01 cites as being the key element of public engagement activities

> "public engagement is where the citizens have a genuine ability to change a decision. That decision could be very limited for example it could be about how that policy is implemented or it could be changing a whole vision… but it's the genuine ability to change a public decision… it's not the only influence on a decision, but it should be very clear to see the extent to which the information from the engagement has been balanced with the other types of evidence such as scientific, cultural and economic."

Involve 01 goes on to argue that engagement is necessary because at times there are things government needs citizens to do. He cites the example of wearing seat belts, but individual behaviour decisions are equally relevant for decision-making around issues such as climate change. Involve 01's key argument is that unless citizens have been involved in those decisions, they are unlikely to change their behaviour.

Democratic reasons for undertaking public engagement are cited by some public bodies. For example Natural England exists to "conserve and enhance the natural environment, for its intrinsic value, the wellbeing and enjoyment of people and the economic prosperity that it brings" while the British Educational Communications and Technology Agency (BECTA) "leads the national drive to inspire and lead the effective and innovative use of technology throughout learning[24]" where learning is flexible and tailored to the learner. In line with the Every Child Matters agenda (which

[23] http://www.involve.org.uk/who_we_are/
[24] http://about.becta.org.uk/display.cfm?page=2077

places emphasis on family support for learners) BECTA also aims to deliver "more effective engagement and communications with parents.[25]"

The NDPBs all have a commitment to public engagement as a result of national policy for example, the "Five a day" agenda and Lord Sainsbury's "Race to the Top" agenda. In some instances there is a legislative remit within the public engagement agenda for example, Natural England's work in relation to the Countryside Act. Involve 01 indicates this legislative driver is also evident in the wider public sector however, the degree which it influences practice is dependent on whether the impact of engagement is measured "For Best Value Local Authorities there is a Duty to Involve[26] which is a very big driver… although it is becoming less potent because the Tories are essentially saying they are going scrap having to collect any evidence to say whether you are doing it or not."

While there appears to be a reasonably strong set of drivers for undertaking public engagement within the public sector, the rewards and recognition for doing so are less apparent. Involve 01 supports this when he says "there are very few rewards, in terms of your job, for doing this sort of thing… but the rewards come about because engagement attracts a certain type of person. Somebody who is interested in other people. The rewards come in heaven, they are the rewards that *you* get from sitting in a room and getting a buzz out of the room." However, Involve 01 also discusses the value gained in developing the skills required to undertake public engagement; that the skills are very transferable and will enhance the CV of those undertaking public engagement. These very personal and skills-based rewards are also evident as an enabler for public engagement in the academic sector.

Despite there being a strong remit from national policy for the NDPBs to undertake public engagement, there appears to be diversity in types of PE. From this brief survey the AHDB include public engagement within its strategy (for example dealing with "consumer concerns and loss of trust in the science") but it is not clear how this manifests itself in practice. In contrast, the HFEA run events where members of the public who are affected by their work can join in (for example, the Listening and Learning event on the licensing of pre-implantation genetic diagnosis[27]). For NDPBs who have a strong remit to provide information (such as the HFEA and the Committee on Climate Change) their activities include telling and sharing approaches through talks, web provision and enquiry services. A number of NDPBs also tell and share by having open meetings where members of the public can attend the meetings of the institutions or publish their reports online.

In order to deliver their stated public engagement claims many of the NDPBs work through, or with, other organisations. Many partner with institutions such as the Research Councils, Regional Development Agencies, schools, local authorities, businesses, or the BBC. Some NDPBs also act as points of contact for grant schemes for public engagement for example, the Access to Nature grant scheme is managed by Natural England on behalf of the Big Lottery fund. The National Endowment for Science Technology and the Arts (NESTA) also seed fund innovative projects. As with other sectors, networks and institutions have emerged to help facilitate public engagement. Involve 01 cites Involve, the National Coordinating Centre for Public Engagement, and the website People and Participation[28]. This website "provides information on what methods are available, what methods they might use in a particular situation." The Consultation Institute also provides training and resources for people wishing to undertake public engagement. Other devices also enable public engagement to happen, Involve 01 cites conferences where Involve are invited to contribute for example, for the Society of Local Authority Chief Executives (Solace)[29]. Peer networks also

[25] http://about.becta.org.uk/display.cfm?page=2077
[26] http://www.communities.gov.uk/localgovernment/performanceframeworkpartnerships/bestvalue/
[27] http://www.hfea.gov.uk/142.html
[28] http://www.peopleandparticipation.net/display/Involve/Home
[29] http://www.solace.org.uk/

exist for example, Interact Networks, IDeA, Participation Works (Youth workers) and Involve have also run action learning sets for councils in London.

The people involved with public engagement for the public sector are a combination of researchers, professional engagers working occasionally with independent adults, families and groups with a specific subject interest. They work more closely with policy makers. Within Local Authorities there will be people who have “been tasked with engaging the public” but it frequently gets contracted out to organisations like Involve or MORI (Involve 01).

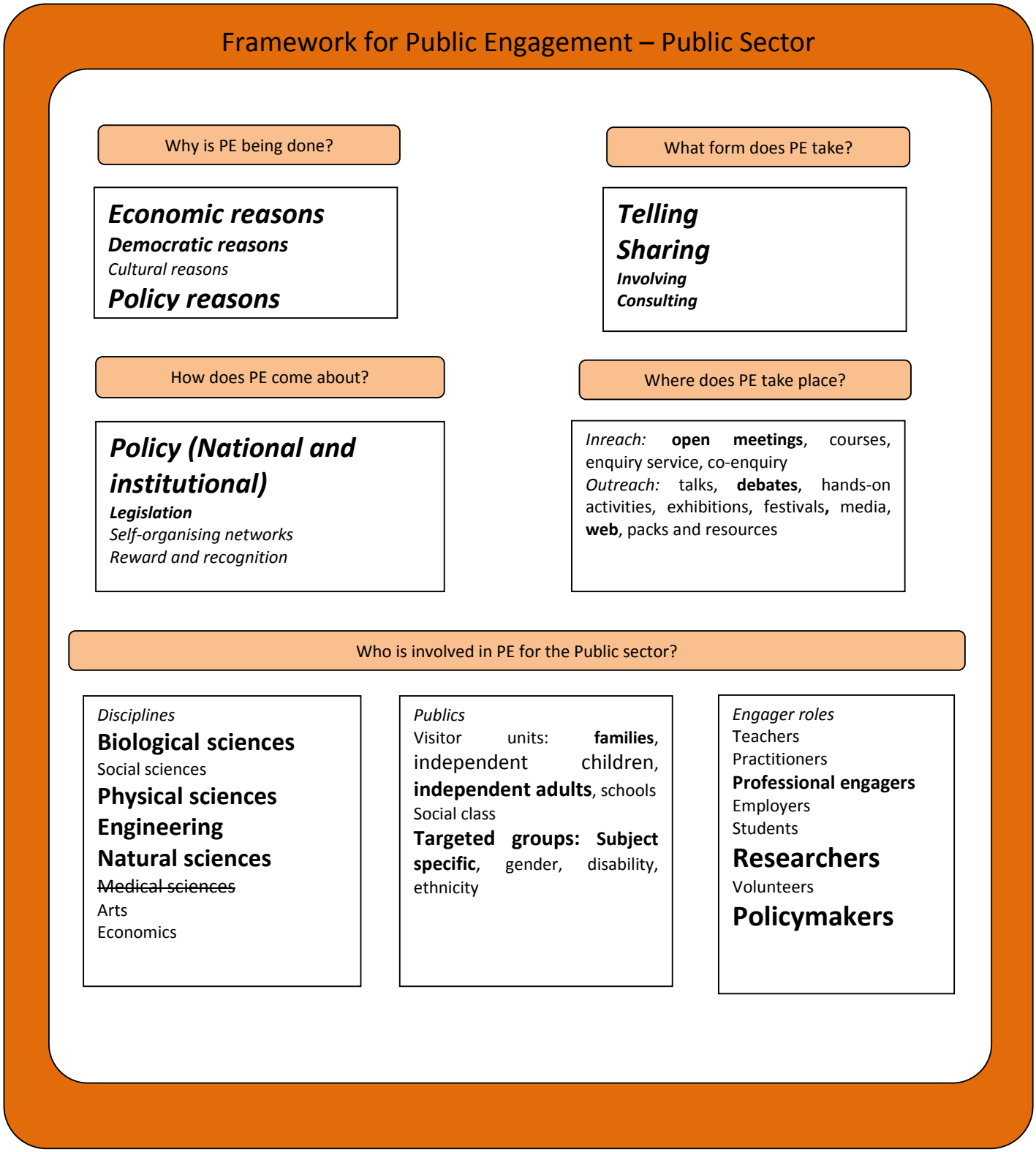
See Figure 4 for a pictorial representation of the map or public engagement across the Public Sector. This is necessarily only able to provide a suggested overview of public engagement for this sector assuming that the organisations reviewed are representative of the wider sector.

Summary – Public

There appears to be some discrepancy between what is said and what is done within the public sector. The bodies reviewed here make explicit statements about undertaking public engagement to influence policy but how that translates into practice does not appear to always support these statements. This is perhaps because these bodies appear to concern themselves more obviously with linking to policymakers rather than citizens.

As with the other sectors reviewed here, the Public Sector utilises networks and partnership working to undertake public engagement activities. There appears to be a lack of rewards for undertaking public engagement within the public sector other than personal development.

Figure 4 - Map of public engagement for the public sector [excluding health]



7 Conclusions

In creating a series of maps of Public Engagement across four sectors: academic, industry, public and cultural a picture begins to emerge. The natural, physical and biological sciences are active, while the social sciences and humanities are less obviously undertaking PE activities as we might normatively define them.

It is also clear that there are many reasons for undertaking PE and broadly the different sectors have adopted the different elements, bit not without overlap. PE is something that has emerged over recent decades from a number of different stimuli and the almost evolutionary nature of this has meant the different sectors have grown into the niches available. This is perhaps most evident for the cultural sector whose primary motivation for undertaking PE is to enhance the profile of science as a cultural entity and to increase democratic efficacy amongst citizens. With industry and academia undertaking PE largely for economic reasons which are most relevant to their needs and stakeholders. It would be interesting to explore how the different sectors could share their expertise, for example could Industry usefully learn from the Cultural sector and contribute to PE being undertaken for largely cultural reasons.

Significant enablers of PE are networks and partnership working. The support provided by these mechanisms is evident across all sectors reviewed here. The rewards for undertaking PE are not clear, but when they are cited they are largely couched in terms that relate to the personal development of the individual delivering the activity, rather than in terms that relate to improved decision-making or quality of research.

The creation of these maps allows gaps to be made visible. There are numerous examples of PE being undertaken for policy reasons, but it should be stressed that this research is not comprehensive and can only within its time constraints scratch the surface of the PE field in the UK at this time.

The framework developed alongside this study was used to shape the data collection and the reporting. The framework is still in development and this study has demonstrated some areas for change are necessary to most accurately reflect the current situation. For instance the framework does not allow for the capturing of who initiated the PE activities and who the target audiences are. The inreach/outreach categories are not wholly appropriate for all forms of PE. There is no space in the framework for capturing the role of partners. We look forward to the framework continuing to develop as further work goes on to map PE.

Recommendations for future work

- There is clearly great value in the networks that enable PE to take place. This study has not been able to study them in great depth. Further work could usefully explore these networks to reveal the key features that institutions and individuals value.
- This study has not made any attempt to judge the quality of the PE activities being undertaken. Further work could usefully be undertaken to identify the key characteristics of good quality PE activities. In relation to understanding quality, is understanding impact. This study has not made any attempt to map the impact of PE activities despite there clearly being many and varied potential and actual impacts on all parties involved.

- There is a significant amount of work funded through the Research Councils and many charitable bodies. This study has not addressed the impact the funding regimes have on the type and content of PE activities. Further work could usefully explore this influence.
- A more extensive and detailed mapping activity should be commissioned to most accurately evidence, both quantitatively and qualitatively, public engagement across a variety of sectors.

Appendix 1

Framework for Public Engagement

Why is PE being done?

Economic reasons
Democratic reasons
Cultural reasons
Policy reasons

What form does PE take?

Telling
Sharing
Involving
Consulting

How does PE come about?

Policy
Legislation
Self-organising networks
Reward and recognition

Where does PE take place?

Inreach: open days, courses, enquiry service, co-enquiry
Outreach: talks, debates, hands-on activities, exhibitions, festivals, media, web, packs and resources

Who is involved in PE?

Disciplines
Biological sciences
Social sciences
Physical sciences
Engineering
Natural sciences
Medical sciences
Arts
Economics

Engager roles
Teachers
Practitioners
Professional engagers
Employers
Students
Researchers
Volunteers
Policymakers

Publics
Visitor units: families, independent children, independent adults, schools
Social class
Targeted groups: Subject specific, gender, disability, ethnicity

Sector:
Industry
Cultural
Third
Public
Academia

Appendix 2 - Organisations reviewed by sector

1 Academia

- Academy of Social Sciences
- Arts and Humanities Research Council
- Biotechnology and Biological Sciences Research Council
- Bishop Grosseteste University College
- British Psychological Society
- British Sociological Association
- Economic and Social Research Council
- Engineering and Physical Sciences Research Council
- Keele University
- King's College London
- Medical Research Council
- Natural Environment Research Council
- Nottingham Trent University
- Science and Technology Facilities Council
- Thames Valley University
- University of Birmingham
- University of Central Lancashire
- University of Cumbria
- University of Essex
- University of Hull
- University of Plymouth
- University of Reading
- University of York

2 Cultural

- Association for Science and Discovery Centres
- British Science Association
- Café Scientifique
- Horniman Museum
- Museum of Science and Industry, Manchester
- Museums Libraries and Archives
- National Museum of Science and Industry
- Natural History Museum

3 Industry

- Association of British Health-Care Industries
- British Petroleum UK
- Food and Drink Federation
- Industrial Trust
- North East Process Industry Cluster
- Orange
- Pfizer
- Primary Science Enhancement Programme

- Science City Birmingham
- Science City Bristol
- Science City Manchester
- Science City Newcastle
- Science City Nottingham
- Science City York
- Sentinus
- Shell

4 Public

- Agriculture and Horticulture Development Board
- British Educational Communications and Technology Agency (BECTA)
- Committee on Climate Change
- Environment Agency
- General Advisory Committee on Science
- Human Fertilisation and Embryology Authority
- National Endowment for Science Technology and the Arts (NESTA)
- Natural England
- Renewable Fuels Agency
- Technology Strategy Board

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