Living Knowledge
The International Science Shop Network

PERARES report No. xx

Embedding Community and Public Engagement Within Regional and National Policy and Higher Education Institutions

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June 2011

Milestone report 7.2 in the PERARES project

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CAPACITIES

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EXECUTIVE SUMMARY

Considerable progress has been made in the field of Science Shops and public research since the European Commission first supported this work under the SCIPAS project in 1999. However the main issue for many Science Shops continues to be sustainability. The current climate of cutbacks in higher education (HE) funding have led HEIs (Higher Education Institutes) across Europe and beyond to focus on what they consider to be core activities. The prevailing reward system for academics and traditional methods of teaching, research and dissemination often mitigate against the more open and developmental approach advocated by Science Shops. While there may be a stated general requirement to engage with the public this often takes the form of a one way transfer of knowledge rather than a co-creation approach which reflects the contribution that CSOs make to the process.

The current climate of economic uncertainty means that it is more important than ever that Science Shops should be firmly embedded within a policy context. Responses to the policy questions in this study suggest however that a range of strategies and plans around knowledge exchange, curriculum development and strategic innovation all offer potential to facilitate Science Shop initiatives within HEIs. As Science Shops spread across Europe and beyond there is a growing acceptance that they can be an efficient and effective mechanism by which HEIs can address a range of strategic priorities.

Several respondents in these studies mentioned the importance of finding a national policy driver to help to make their case. In some areas, Science Shops were able to gain momentum or traction from changes within their national policy. Recent changes in HEI policy in Ireland for example may provide the context for embedding very successful initiatives which have yet to achieve longer term sustainability.

While this report focuses on core areas of teaching and research in HEIs, it also considers developments in third stream activities which have come to the fore more recently in relation to public engagement activities. These policies also have the potential to support the development of Science Shops in HEIs. For others however, local and regional policies have been more useful in terms of exploring potential to develop Science Shop practice. One key focus for these policies is the area of partnerships with CSOs and this report also reflects on good practice for Science Shops working with CSOs.

All Science Shops reported benefiting from international policies, in particular those developed and supported by European Commission. These policies have been critical to the success of the Science Shop movement across Europe and in influencing national policies both within the EU and further afield.

But perhaps the most striking thing about this study was the impact of lobbying by Science Shops on the spread of this movement across Europe and beyond. While for some respondents there was limited awareness of the policy context as a whole, all acknowledged the necessity of lobbying. A key factor coming through in these studies is that policies do not exist in isolation but can be influenced and developed by individuals. This can happen on a formal basis, via submitting responses to consultations, and indeed Living Knowledge as a network has had some notable successes with this. However it can also happen informally and it is important to ensure that Science Shop agendas are represented in as many different fora as possible.

1. INTRODUCTION

The PERARES (Public Engagement with Research And Research Engagement with Society) project aims to strengthen the interaction between researchers and Civil Society Organisations (CSOs) and citizens in Europe. The project is made up of twenty-six partners from 17 countries. Partners include Science Shops, social organisations, higher education institutions (HEIs) and a research funder. The partners actively involve researchers and CSOs, and help both CSOs and general public in dialogues to articulate research questions. These will then be put on the research agendas of the partnering research bodies such as HEIs and Science Shops.

This report is an output of workpackage 7 within the project. This workpackage's objective is to strengthen the position of Science Shops[3] and similar public engaged research initiatives in Higher Education Institution (HEI) policy to secure longer term security for such initiatives. It aims to do this by creating a range of tools for successful policy interventions for use within HEIs and supporting structures. The overall objectives for WP7 are to:

- Advance the uptake of research needs of CSOs in academic agendas, including through curriculum development
- Advance the embedding of CBR units at strategic levels within universities, and regional and national policy
- Update previous assessments of good practice and bottlenecks from previous projects such as InterActs, and bring them to operational level
- Provide a range of tools for successful policy intervention, at both HEI and national levels
- Ensure that the needs of CSOs are reflected at national level within HE policy

This workpackage aims to document the different elements which contribute to Science Shop sustainability with a view to understanding what factors ensure that this work is supported, embedded and developed in higher education across Europe. We have aimed for diverse representation in these studies, although many of the findings are based on responses to requests for information and discussions carried out with other workpackage members.

The current report examines the state of the art in terms of community and public engagement policy within HEIs and within regional and national policy. While much of the discussion on Science Shop sustainability tends to focus around sources of funding, this report sets out to consider whether a favourable policy context has contributed to the sustainability of Science Shops where it exists. It seeks to learn from both successfully embedded Public Engaged Research (PER) initiatives and from failed PER initiatives, examining the ways in which they have sought to link to and build policy both within their own institution and at a country wide level, collating information on how Science Shops themselves contributed to the development of their policy context. It also seeks to make recommendations for new and established Science Shops to help them work towards long term sustainability.

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[3] A science shop provides independent, participatory research support in response to concerns experienced by civil society. They carry out scientific research in a wide range of disciplines – usually free of charge and – **on behalf of citizens and local civil society.** Science Shops are often linked to universities, where students conduct the research as part of their curriculum.
http://www.scienceshops.org/new%20web-content/framesets/fs-about.html

2.   METHODOLOGY

Given the scope of the study, a range of methods were employed. Initially, a review of existing literature was carried out, examining lessons learned both from previous projects undertaken by the Living Knowledge Network[4] and by other related bodies. Early stage outputs from the PERARES project were also utilised, particularly the reports from fledgling Science Shops which were established under the programme.

A questionnaire was carried out to give an overview of how and where Science Shop-type initiatives were located within HEIs and whether they were written into policy within those institutions. The data was collected via an online survey tool. In total there were 31 responses from HE based science shops, including four in development. It should be noted that within this report UK countries (Northern Ireland, Wales, England and Scotland) are counted separately. For a full copy of the questionnaire results, see appendix A

A further data collection stage was necessary to address the issues in a more in-depth way. For this stage, a template was developed to gather information on policy development within HEIs and at a broader level within national governments. The template was designed to be either completed by organisations themselves or in conjunction with senior HEI staff and policy makers. In addition, telephone interviews were conducted with some HEIs to collect information. In total 14 templates were completed, 11 were self administered and 3 were administered by telephone interview. For a copy of the template, see appendix B.

In addition, discussions took place both within the workpackage meetings and less formally with other partners in the PERARES project and the wider Living Knowledge network where these ideas were discussed and workshopped in more detail.

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[4] Living Knowledge is the International Science Shop Network. It offers resources for people interested in building partnerships for public access to research. It gives members of the network an opportunity to exchange information, documentation, ideas, experiences and expertise on community-based research and science and society relations in general.
http://www.scienceshops.org/new%20web-content/content/list-and-newsletter.html

3.   POLICY CONTEXT FOR SCIENCE SHOPS

This section examines how HEI based Science Shops are embedded in policies at different levels and in a range of countries and makes recommendations for both new and established Science Shops in relation to utilising and contributing to policy. It begins with a discussion of international policy, particularly focused on the impact of Science Shop lobbying within the European Commission to develop policy in this area of work. It then examines policies in relation to research and education since both are clearly indicated as core policy areas within HEIs, and in relation to the knowledge transfer/third stream policies that some institutions may have. While there may be a stated general requirement to engage with the public this still often takes the form of knowledge transfer rather than a collaborative approach which reflects the contribution that CSOs make to the process[1].

3.1   Science Shops and International Policy

This section will explore the myriad of factors which contribute to the sustainability of Science Shops in different regions. At a broad level a range of European Commission (EC) policies supporting networking between different nations, science communication and knowledge partnerships have been important. In particular EC Science in Society policies have been instrumental in supporting the development of the Science Shop movement in Higher Education across Europe and beyond.

Science Shops have been reflected in agendas at European Commission level for over fifteen years. The SCIPAS project (Study and Conference on Improving Public Access to Science through science shops) was awarded financial support by the European Commission under the 5th Framework Programme of the European Community for Research, Technological Development (RTD) and Demonstration Activities (1998 to 2002), and its specific programme "Improving the Human Research Potential and the Socio-Economic Knowledge Base" ("Strategic Analysis of Specific Political Issues"). This helped to develop the infrastructure for the Living Knowledge network as well as providing a range of resources for people interested in developing Science Shops.

Following on from this, the ISSNET project (Improving Science Shop Networking) focused on how to build and maintain a science shop network, e.g. by exchange of information and research cooperation. ISSNET delivered reports on structuring the network, options for community-based research cooperation, conference proceedings and magazines and newsletters. ISSNET was a 30 month thematic network funded within the programme Raising Public Awareness of Sciences and Technology of the Fifth Framework Programme of the Commission.

The INTERACTS project (Improving Interaction between NGOs, Universities, and Science Shops: Experiences and Expectations) was a pioneer cross-national study which aimed to identify necessary changes in structures and routines in the RTD system for improving the future interaction between NGOs, researchers, and intermediaries like Science Shops. It was funded by the European Commission/DG12 under the Fifth RTD Framework Programme. INTERACTS contributed to the strengthening of the interaction between

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[1] Schuetze, H G (2011) unpublished paper presented to HEA Seminar, Dublin 31 May 2011

research institutions and society and provided a more in-depth understanding of processes and effects of knowledge production.

While the ISSNET project indicated a growing demand for tools and support to get started with new science shop activities in many regions of Europe, the TRAMS project (Training and Mentoring of Science Shops) aimed to fulfil this need by supporting the ongoing professional development of existing science shops and encouraging the development of emergent science shops through the provision of training and mentoring support. It was funded within the 6th Framework Programme of the European Commission in the theme 'Governance, scientific advice, outreach and communication' of the Directorate Science and Society.

Whilst it is difficult to directly attribute outcomes to projects such as these, it is clear that these activities have helped the Science Shop model to spread out internationally. For example, when the Canadian government sought to support the creation of alliances between community organisations and postsecondary institutions via the creation of the CURA programme (Community University Research Alliance), the Science Shop model was one in which they were particularly interested. Indeed several Science Shop type organisations are now in existence across Canada. Similarly, Living Knowledge network members have worked to develop the Science Shop concept in Asia, with thirteen new Science Shops in China and emerging Science Shops in Malaysia and South Korea.

It is also the case that participation in projects such as these brings other results. For example there are opportunities to influence the development of further European Commission Framework programmes and workplans within specific programmes. Representations made by Living Knowledge network members have helped to ensure that framework programmes and workplans have enough scope to enable Science Shops to apply for funding . Even a relatively small reference to the work of Science Shops can be enough to ensure that Science Shops are eligible to apply for resources to develop certain aspects of their work. These kinds of interventions have enabled the Living Knowledge network to access funding to further develop Science Shops and indeed are responsible in part for the funding stream which is supporting this current report.

EC funding has also enabled interaction between colleagues in universities across the EU to develop joint workplans for which they can then make funding applications. According to one respondent such programmes 'allow capacity building through the expertise encountered in these collaborations, as well as by funding staff and conference attendance.' Even where these applications have been unsuccessful, productive networks have been established, and ideas for interesting research have been developed which has contributed to the development of science shop-type structures. EC Science in Society policies also helped science shops survive and gave recognition of the work, with Brussels seeing Science Shops as an innovative approach to bridge the Science-Society gap. This support has also enabled some Science Shops to make stronger arguments for support at a national and local level.

3.2 Science Shops and Education Policies

In times of economic austerity, the focus across society is likely to be on sustaining critical elements of public sector work in general and sacrificing those elements which are seen as less important. Government reforms in Higher Education across many European countries (including university mergers) are already impacting on HEI based Science Shops. The prevailing view is that in order for Science Shops to maintain their position in HEIs they need to contribute to the core activities of teaching and/or research. As one respondent to the UK-based National Co-ordinating Centre for Public Engagement consultation commented 'having a core mission to engage with the public will enable senior managers to justify the investment in teaching and research which furthers the development of that identity.[5]'

In spite of the fact that many Science Shops across Europe are based in HEIs, support from the EC has been predominantly from Directorate General (DG) Research. Under DG Education the Dublin Descriptors have proved useful in articulating how Science shops can be used to meet a range of these requirements at levels 2 and 3 in the HE cycle (see Appendix C for the Dublin Descriptors). While there have been some efforts by the DG Education to engage with CSOs around the issue of partnerships with Higher Education, it may be possible for Science Shop to examine further opportunities within this area.

3.2.1 Knowledge Exchange through Education

Canada is one country where a range of policies promote partnerships for knowledge exchange[6]. Within all of the federal funding agencies (health, social sciences, humanities, natural science and engineering) policies have been developed to encourage partnerships for scientific and commercial innovation. Knowledge transfer[7] is seen as a key factor for success, and government agencies are increasingly hiring individuals who are trained in knowledge transfer. Student participation in the Science Shop contributes to the training required for this type of work. Along with knowledge transfer courses, the Science Shop is seen as building capacity for careers that require the combined skills of research excellence and community outreach and engagement.

Synergy between government and research granting agencies planted the seed for the development of some Canadian Science Shops. A Community-University Research Alliance funded by the Social Sciences and Humanities Research Council of Canada has enabled the development of 'efficient and effective knowledge transfer methods, strong partnerships between universities and communities, and student-centred training for knowledge transfer.' New policies in Canada for evidence-based funding also contributed to the development of the Science Shop.

Within the UK, a drive towards HEIs exchanging knowledge with communities had dedicated funding through the Active Communities Fund, which then led on to the creation of Higher Education Innovation Funding (HEIF) by the Higher Education Funding Councils across the

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[5] P43 in NCCPE (2010) 'Embedding Public Engagement in Higher Education, The Key Issues' https://www.publicengagement.ac.uk/sites/default/files/National_SAR_final_report%201st%20December%20FINAL.pdf

[6] Knowledge Exchange as used in this report generally reflects a process that is two way and which values the knowledge that the community partner brings to the process

[7] Knowledge Transfer is more of a one way process, with knowledge being transferred from the academy to the community

UK. Some of this funding focused on third sector organisations and how universities might work to meet both their needs and the needs of the HEIs.

It should be noted however that while HEIF policy is broadly supportive of Science Shops within the framework of knowledge exchange activities, much of the focus is on economic development and 'it is up to individual Universities to decide how to interpret it' (UK respondent) and thus the future of these projects within HEIs does rely to some extent on the continuing support of senior management with institutions.   As one respondent commented, 'the growing lack of democratic decision making in universities makes science shops vulnerable to the tastes of any new senior managers.' Of course this can also present opportunities where a senior manager is enthusiastic and supportive as well as challenges where they are not.

Similarly, in terms of developments in the Netherlands, in the seventies and eighties all Dutch universities were strongly encouraged to create a Science Shop as a mechanism for exchange of knowledge between universities and societal organisations. In spite of growing demand for Science Shop support from CSOs, as one respondent put it 'Nowadays universities are free to continue a Science Shop' but are under no obligation to do so. Another Dutch Science Shop has been able to link to industry focused knowledge exchange to help establish the organisation.

In Ireland the new National Strategy for Higher Education to 2030[8] while promoting engagement with society very actively, includes both industry and community under the banner of engagement with society. Thus there is an inherent danger that knowledge exchange with industry could be seen as an alternative to working with under -resourced local communities community in this context, and that the policy could be used against community engagement if this suited senior management in HEIs.

3.2.2   Strategic Innovation in Education

In some situations difficult circumstances can provide the catalyst for positive change. In spite of the financial pressures in Irish Higher Education the Higher Education Authority (HEA) policy of funding strategic innovation enabled for three year funding for 2 full-time staff for one HEI based Knowledge Exchange programme incorporating both community based learning and research.   More recently Ireland is one of the countries which has undergone economic restructuring within the European Union. The Higher Education Authority in Ireland has used this situation to re-evaluate the key purposes of Higher Education in their country. The National Strategy for Higher Education to 2030 which emerged from this process emphasises the significance of HEIs engaging with society in several sections and has been instrumental in supporting the development of Science Shop type programmes. The strategy notes: 'Greater engagement and partnership between higher education institutions and community and voluntary groups offers significant potential to progress equality and community development and to further social innovation...Partnerships with community groups 'can contribute to the creation of an academic community engagement model that builds academic community partnerships to create long-term cultural and social change.' The strategy cites as examples of best practice in the Irish context two projects which value the knowledge of the communities in which they are based, Dublin City

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[8] http://www.hea.ie/files/files/DES_Higher_Ed_Main_Report.pdf

University's involvement in Ballymun regeneration and Dublin Institute of Technology's Community Links Programme[9]. Both institutions are partners in the current PERARES project

3.2.3   Issues within the curriculum

Within some countries, attempts are being made to facilitate this kind of work within HEIs. Regarding curriculum development the National Strategy for Higher Education in Ireland report[10] states that 'Engagement with the wider community must become more firmly embedded in the mission of higher education institutions', and this could be achieved by recognising the 'civic engagement of their students through programme accreditation' and by putting in place 'structures and procedures that welcome and encourage the involvement of the wider community in a range of activities.' As one respondent from an Irish HEI commented 'This policy and strategy can be used quite extensively to support the development of the Science Shop from this point on.'

In addition to its focus on community engagement, the National Strategy for Higher Education in Ireland has identified the need for students 'to spend some time in a work or service situation, and formally acknowledge such work through accreditation or inclusion in the student's Diploma Supplement'[11]. Such a policy supports the development of new courses or curricula redesign to include community based learning and research activities.

In France, doctoral schools are creating units for PhD students (a minimum number of units is obligatory during PhD studies and teachers' formation) and Science Shop activities may fit one of the existing units or lead to the creation of a new units.   One French respondent noted 'The drive towards interdisciplinary projects suits the character of many Science Shop projects and meets the criteria of the quadrennial pedagogic plans.'

Respondents also identified difficulties within the French system which are replicated to some extent in other countries. As one respondent commented 'Currently the policy-makers are far from being able to understand the concept of Science Shop…(and) the multiple changes and current instability of the research and education policy do not allow a constant development of any initiative at Science Shop level.' The challenge here is to find opportunities within this changing context to influence policy makers. In some universities it is difficult for students to get compensation for Science Shop type work; they have problems getting ECTS (European Credit Transfer System) credit points for extra work done, and it is also difficult to have methodically different or interdisciplinary work officially recognised. Quality control mechanisms within HEIs can lead to inflexibility in academic programmes.

On a more practical level there is now also a requirement for laboratories to pay 4th and 5th year students for internships of more than 2 months which can limit opportunities for Science Shop type projects although it may also offer opportunities if funding becomes available. Volunteer work (outside but linked to the curriculum) in some countries is also coming under pressure because most students need to work in order to finance their studies and many

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[9] HEA (2011) National Strategy for Higher Education to 2030 p77
http://www.hea.ie/files/files/DES_Higher_Ed_Main_Report.pdf
[10] Hunt (2011) 'National Strategy for Higher Education in Ireland' HEA
http://www.hea.ie/files/files/DES_Higher_Ed_Main_Report.pdf
[11] Hunt (2011) op cit P17.

staff are under increasing pressure from research, teaching and administrative commitments. This might suggest that longer term the greatest potential for Science Shop working within HEIs remains at a curricular level.

3.2.4 Protecting Vulnerable Populations

Government policies and delays in vetting of staff and students before working with vulnerable adults or children have also impacted on work in UK and Ireland. Protection of Children and Vulnerable Adults policies have caused problems for the timescales of student research and have added a cost implication for students. Increased focus on research ethics has in some cases led to risk adverse decisions making in terms of student research projects, even when students are not necessarily dealing directly with vulnerable populations.

3.3   Science Shops in Research Policies and Science Communication

In the Netherlands and in the UK Public Understanding of Science and Science Communication agendas also were relevant to the setting up of Science Shops. In the national government in the Netherlands the department responsible for Science Communication and Public Engagement consults Science Shop staff on draft policies and workplans. This is partly based on the good working relationship developed by a staff member with the government representative.

However scientific communication and education is often unidirectional, aimed at communicating the benefits of new technologies etc. The Science Shop model has the potential to facilitate greater dialogue and understanding between CSOs and the research community with the aim of minimising science-society conflicts at the local level. Initiatives focussed on Public Engagement with Science or Technology Assessment may be suitable for synergistic relationships with Science Shops. In such a model, Science Shops could develop into informal and local participatory technology assessment agencies thus providing a dual role and helping promote applied science and technological research that reflects the broader concerns of the members of the CSO.

Centralised research agendas for university research (which are often dependent on private industrial stakeholders) tend to follow the same pattern, and 'even if the principle of Science Shops can be understood as a competitive advantage for the image of university, bottom-up organisation in which CSO demands should take the lead in influencing research orientations is still considered radical by many HEIs.' (CSO respondent)

More recent research policies focused on community engagement or on research into pedagogies (such as community based learning or community based research[12]) may be more helpful. The UK government's proposed Research Excellence Framework, which is the mechanism for evaluating (and funding) research within UK universities, may encourage staff to be involved in this work through its Environment and Impact elements[13].   Whilst not

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[12] Community based research is a collaborative, mutually beneficial research process involving researchers and community partners which aims to benefit both parties.
[13] http://www.hefce.ac.uk/research/ref/

directly supporting Science Shops it may support opportunities for Science Shop working within universities

In the UK however the Research Assessment Exercise (prior to the Research Excellence Framework) rewarded staff for focusing predominantly on research thus there was less time and incentive for staff to focus on teaching.

In Ireland there is also no mention of community-engaged research or CBR in the National Strategy, despite there being a whole chapter on research.

3.3.1 Intellectual Property

National Science, Technology and Innovation strategies with increasing focus on patent and application based outputs can cause problems for Science Shops in many countries, particularly where there is competition for scarce resources. There were several comments from respondents on Intellectual Property (IP) policies which have encouraged a focus on commercial and income generation projects in HEIs rather than social innovation and knowledge exchange. The funding base for Science and Technology is significant in 'it's lack of emphasis on public engagement in research/science (including Science Shops) which means this is not likely to be a priority for researchers' (CSO respondent). Even the use of terms such as 'citizen participation', 'sustainability' and 'local development', are terms widely used by authorities and funders to express something quite different from what CSOs and others would understand these terms to mean. A clearer definition may be helpful, however it might also limit opportunities for flexibility.

However Enterprise Ireland's policy of supporting HEI researchers to apply for international funding, ensured coordination support for FP7 applications which led to partnerships and learning across the European region.

3.3.2 Employment Policies

Recent government policies on cutting budgets and staff numbers in the public sector are having a serious impact in many countries. Reduced core funding for HEIs means that continued funding for core posts is uncertain and 'even when there is external funding, it takes time to get new posts approved which can hamper work.' (HEI respondent). New more complex procedures for approving posts and recruiting staff and the goal to reduce staff in public services also have an impact on sustainability of Science Shops. In some countries, the moratorium on recruitment in the public sector is seen as the greatest impediment to the development of Science Shops within HEIs.

One area particularly mentioned by several respondents were policies related to tenure, promotion and merit. In many cases these do not reflect the demand for knowledge exchange as an indicator of academic excellence. When faculty engage in community outreach and engagement 'their work, often painstaking and time-consuming, is valued less highly as service and not as research' (Canadian HEI). In some cases, such work is not reflected at all in the HEI's promotions criteria. This can lead to difficulties in securing support from academic staff members for students working on Science Shop projects. As a Canadian HEI commented 'A focus group study within the University indicated that faculty feel pressures of traditional academic norms that thwart community-based knowledge transfer.' An Israeli report examining the feasibility of a Science Shop suggested that 'the

time limitations and career considerations of university researchers were continuously mentioned. There is no academic benefit to working with CSOs or indeed doing any work outside the 'ivory tower' that does not contribute directly to promotion'[14] A Dutch HEI commented that their new tenure track system was 'a possible threat for the Science Shop'. They fear that researchers would not be able to spend any more time on community based research.

3.3.3   Third Stream Activities and Widening Access

Policies aimed at widening access to the resources of Higher Education have also helped to open the debate for this area of work in both the UK and Ireland. The National Access Strategy in Ireland, with its focus on widening participation in Higher Education, has helped focus on the benefits of building bridges between disadvantaged communities and Higher Education.   In the UK there was also a focus on third sector organisations and on volunteering under the last Labour government which has been to some degree rebranded as 'big society' by the current coalition government. One outcome from this focus was Higher Education Innovation Funding which sought to develop capacity in universities to engage outside the academy with a goal of making social and economic impacts in society. The department for Employment and Learning Northern Ireland have funded The Science Shops in Northern Ireland through this stream since 2004.

Public engagement policies – such as the Research Councils United Kingdom (RCUK) Concordat on Public Engagement[15] and NCCPE Manifesto on Public Engagement[16] – are broadly supportive, although a lot of public engagement activity still falls in the area of 'inspiring interest' rather than engagement with civil society. The NCCPE is part of the Beacons Project which was set up in the UK in 2007 by Research Councils UK and the Wellcome Trust. It also funds six Beacons for Public Engagement across Great Britain. It has a goal of 'support[ing] universities to increase the quantity and quality of their public engagement activity'[17] Whilst it is ostensibly a public engagement initiative which falls under third stream activity, it has worked very hard to tie public engagement to a range of other agendas, particularly teaching and research, and has successfully lobbied for impact to become one of the areas measured in the UK's Research Excellence Framework.

3.4   Responding to Regional Policies

Many HEIs have stated aims to contribute to their communities and their regions but regional outreach and engagement has not necessarily involved a reflection of the demands and needs of communities in the region, rather this work has tended to have a business focus. Though the majority of Science Shops have not been funded specifically within their regions, although some have received financial support for particular projects and others have received opportunities to promote their work and link it to other initiatives in the region.

In France the regional dimension is important because regional funding is available for projects linking different cities (universities or other structures) of the region so could provide

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[14] 'The Feasibility of Science Shop type initiatives in Israel: A preliminary study' Unpublished report for WP4 of the PERARES project.
[15] http://www.publicengagement.ac.uk/why-does-it-matter/concordat
[16] http://www.publicengagement.ac.uk/why-does-it-matter/manifesto
[17] http://www.publicengagement.ac.uk/about/our-vision

a source of public funding for Science Shops. One Regional Government in France has also supported the establishment of a PICRI (Partnership Institutions, Citizens for Research and Innovation) based on the Canadian CURA model. The aim of the PICRI is 'to promote research programmes based on collaboration between public research laboratories and CSOs in order to 'strengthen the democratic process (in the region) and diversify the potential sources of social innovation.' This model has proved interesting to potential French Science Shops.

In Ireland, two city councils have expressed interest in their local Science Shop with one providing seed funding to scope out potential demand/interest from CSOs and key policy makers in the University. More recently one council has supported the creation of an Advisory Board for the Science Shop to broaden consideration of which projects can be supported by the Science Shop.   Within Northern Ireland a regional policy and funding stream (Higher Education Innovation Funds, HEIF 1 – 3, based on HEFCE model but adapted to the Northern Ireland context) were predominantly focussed on business innovation but have supported Science Shops as an example of partnership working between the two universities in Northern Ireland and good practice in working with 'the wider community' within the region.

In Canada Science Shops established under the CURAs have built partnerships and shaped services to meet the needs of policy makers in provincial and regional governments. Science Shops there carry out high quality systematic reviews of information and research evidence to inform social and health policy development.

Two attempts at implementing Science Shops to meet regional needs have been less successful. In Belgium the Minister of Research in the city provided funding to create a bilingual Dutch-French Science Shop; unfortunately the initiative was short lived. In Wales considerable funding was provided for Science Shops to address regional needs under a Strategic Development Fund (at one point the initiative had nine staff). Again the initiative was relatively short lived partly because the success of the project in establishing external links was not replicated to the same extent within the HEI. Consequently when initial development funding came to an end the HEIs involved were facing economic challenges and did not support the continuation of the project.

At one Dutch University, the Science Shop is a key part of the response to the general need for HEI expertise at different levels in regions, municipalities and sectors. However the University acknowledges that research for the non-profit sector offers different challenges, so may need different structures and a different approach. This University has made a structural attempt to address this demand from different sectors with the implementation of two structures which sit side by side in the University. The mainstream University research addresses profit and government sectors while 'the more slipstream Science Shop projects address the non-profit and non-government sector. In this respect the Science Shop is complementary to the other (University) research programmes.' (Dutch HEI respondent).

These examples suggests the value of complimentary rather than competitive approaches to knowledge exchange across a range of sectors. United Kingdom universities such as Manchester, with close links to the city council and across the sub-regional area, a Beacon and HEIF funding, and Brighton, with their Community University Partnership Project (CUPP), the South East Coastal Communities project, links with local Regional Development

area and local policy groupings have similar initiatives and the ongoing Beacons projects in the UK attempt to address regional needs in a similar way.

4.   EMBEDDING SCIENCE SHOPS IN HEI POLICY

When examining whether, or how, Science Shops are embedded within HEIs, there are a number of factors to consider. First of all, where is the Science Shop located within the HEI? Is it within an academic department and therefore specialist within one discipline, or is it based within the administrative function of the university, servicing students from many disciplines? How does it link to HEI strategy – is it written in at senior management level, at operational level or not at all? Does it link to research, teaching and learning, or civic engagement policies? These issues will be examined in this section. A further question of how it is embedded in HEI curricula will be dealt with in the next section.

There is a huge variability in terms of where Science Shops are located within HEI structures. Results from the small scale survey undertaken for this workpackage indicated that of the Science Shops that responded, 13 were based within academic departments whilst 18 were based within administration units of the university.

The longest established science shops were more likely to be located within academic departments.   However given that most of these Science Shops are Dutch, this could be a factor of how Science Shops operate in this national context where they specialise within an academic discipline. These include Management, Mathematics, Engineering, Chemistry, Economics, Engineering and Health. Typically these types of Science Shops complete smaller numbers of very high quality projects, often with graduate students. In many cases they are not staffed full time but rather have staff members who also have an academic role within the academic department.   There was a mixed picture for newer Science Shops, with roughly half being located within academic structures and the other half being located within administrative or support service structures. For the mid-range Science Shops, (5-15 years established) more were located within administrative or support services than within academic structures.

It is also interesting to note that within support structures, there was no clear 'home' for Science Shops. In the survey cohort, Science Shops were established within Communications, Student Affairs, Research Office, Strategic Affairs Office, Cultural Affairs Office, and Science Communication Unit.   This is testament to the flexibility of the model and the different ways in which it can be utilised within different organisational contexts.

4.1   Higher Education Institutional Policies

The questionnaire was also utilised to build a picture of how HEI-based Science Shops were embedded within the core strategic and policy context of the HEI itself. Do they exist as separate units, or were they linked to core goals and values of the institution? The questionnaire asked whether there was a dedicated community engagement strategy or policy and whether CBR was included in research policy or strategy. Of the 31 responses received, 14 Science Shops worked within HEIs where there was a dedicated strategy for community engagement whilst ten did not and seven did not know. In nine cases, community based research was included in the research policy or strategy whilst in a further nine cases, it was not, with seven not knowing and a further three stating that their HEI did not have a research policy. It is interesting to note that a sizeable minority of Science Shops

were not aware of their own policy context. Not having this knowledge may present a barrier to science shops who seek to align their work within university core missions.

A further more qualitative phase of research was carried out to examine these issues in more detail. Science Shops were asked to identify where and how they were linked to HEI policies. Three Science Shops felt that they were not linked to policy at the institutional level and only a few felt that they were written in fully at both an operational and a strategic level.

4.2   Models of good practice

There were a few examples of very good practice where Science Shops were written in at all levels within the HEI. In some cases this reflected a Science Shop being set up in a HEI which already had community engagement strongly written in at strategic level. Within this context, a Science Shop was seen as an additional means by which to carry out one of the HEI's core missions. One HEI within the UK which had recently set up a Science Shop had a dedicated community outreach department. This department was asked to develop the university's social engagement policy which became part of the corporate plan. The department also ensured that the social engagement policy was reflected in all sub-policies within the university. In this case, setting up a Science Shop was simply a step further along the road of community engagement. This meant that the Science Shop within this institution was embedded both within its own department and within the organisation as a whole, enabling the HEI to make further use of their student resource to service local community needs. One Spanish Science Shop was written into the university's civic engagement policy. In a couple of cases, community service work was also written into the HEI's promotions criteria so that academics who undertake this work can have it recognised as contributing to a core mission (although in conjunction with other core missions).

Science Shops had also been written into policy at all levels in the Netherlands. Initially, they 'benefited…from a clause in the Higher Education Act which directs universities to 'pay attention to the advancement of a sense of social responsibility"[18] In 1976, a committee reporting to the Rector was established in Groningen University to examine the viability of a Science Shop there. In 1983, the Minister for Education and Sciences to Parliament stated that each University should provide 2 to 5 full-time equivalent posts in Science Shops. However despite this strategic level focus within both national policy and HEI policy, and high level support at both levels, in the late 1980s there were policy level changes. The 'service to society' mission was removed from the Higher Education Act and there were increasing pressures to diversify income streams into HEIs. Several of the Dutch Science Shops fought off attempts to close them down and many reorganised and adapted their working methods to meet new strategic priorities. For a fuller overview of the history of Science Shops in the Netherlands, please refer to the second SCIPAS report (Mulder et al, 2001). For the purposes of this study, it is important to note that they became vulnerable when the strategic context changed and subsequently have had to work hard to maintain their position within Dutch HEIs.

4.3   Utilising external policy drivers

As discussed previously, some Science Shops benefited from external policy drivers which created the context within some institutions for a strong internal focus on community

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[18] Mulder et al (2001) 'Successes and Failures in Starting a Science Shop' SCIPAS report No. 2 p22

engagement. For example one recently established Science Shop in Canada was situated in a university whose strategic plan called for "promotion of knowledge transfer to service society by working with partners in the public and private sectors," so the Science Shop has 'developed with the organizational advice and resources from all levels of the University – including vice presidents, deans, chairs of departments, faculty, students and staff'. Similarly in Belgium there were political drivers to establish a Science Shop which were then picked up and implemented by senior members of academic staff who were in a position to embed the initiatives within the HEIs, ensuring that the small seed funding offered by government was matched by goodwill and time internally. Senior managers are still involved in lobbying government for ongoing funding. Another UK HEI had been looking at the new Research Evaluation Framework and the Manifesto for Public Engagement to see whether there might be space to utilise these external policy drivers to make internal arguments to support the fledgling Science Shop.

4.4   Creating policy contexts

In other cases, Science Shops were set up by individual staff members who were committed to the concept and who then worked to create a policy agenda within the HEI and beyond. In South Africa, an academic member of staff developed a Science Shop as 'the equivalent of a personal research project' and 'the unit was never represented formally on any university structures, reporting (not all that formally) to the dean of the faculty. Support was also extended by more senior officers of the university including the deputy principal and deputy vice-chancellor for research' [19] In this case, the staff member used his personal influence to attempt to embed a Science Shop within the HEI, only failing because of the changing policy context at a national level, where policy of 'corrective action' meant that the HEI itself was regarded as the 'wrong' university[20].

Another example is that of a UK Science Shop identified that there were no policies or strategy in place that directly supported the Science Shop. An opportunity presented itself in terms of a senior staff member with responsibility for the area of outreach being appointed and the Science Shop manager worked with him to develop an outreach strategy. They also used this to write community engagement via student projects into the education strategy and to ensure that there were small references to community engaged research in the research policy. This ensured that their deliverables were viewed as part of the core work of the university. Similarly a newly-established Italian HEI-based Science Shop developed a document which 'has been published on the Faculty's web-site and sent to participants. The Rector of the University expressed positive comments on it and mentioned it during his official speech for the new Academic Year'[21].   As one respondent commented in a telephone interview 'Science Shops are small, so one person can have a lot of influence, for good or bad'.

There were also examples where Science Shops recognised that their work was not sufficiently written into the HEI policies and were trying to change this. In these cases there was an overarching framework which at least created a policy space where the Science Shop might fit – Irish, UK and French HEIs identified that there were higher level policies in

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[19] Mulder et al (2001) 'Successes and Failures in Starting a Science Shop' SCIPAS report No. 2 p55
[20] Ibid P56
[21] 'Feasibility Study: University of Sassari' Unpublished report as part of WP4 of the PERARES project

place but that these did not necessarily translate into practical support. In the UK case, the manager stated 'they have welcomed the initiative but we have not yet had the staff time dedicated to it which it warrants'. In France the organisation was aiming to be proactive on this 'We intend to go through the university statutes in detail and to point out the advantages of Science Shop work for the students in order to build up a catalogue of common criteria between the university statutes and the Science Shop'   In the Irish case the respondent pointed out that 'the University has a civic engagement policy as part of its strategic plan. The university teaching and learning policy would be supportive of Science Shop research '…however no University policy explicitly supports or even names Science Shops; it is more that we have been using the policy goals in these documents to match with the Science shop process and rationale'.

There was also one example of a Science Shop which had closed. In this case, it had been funded through a national strategic development fund as a pilot project and received further funding in an additional round but failed to secure alternative funding after this. A number of different issues contributed to this. Whilst the university had a stated commitment to making a contribution to their local community, the Science Shop was located in what one key staff member referred to as a department which was 'highly peripheral' to faculty. In initial phases it was located within a part of the university which was at best a satellite and at worst completely isolated from the core work and failed to make the connection between the work the Science Shop was doing on the ground and the university's strategic drivers. Whilst an internal evaluation praised the project for making a significant contribution to local communities, the project had failed to be visible at the higher levels of the university. Given an economic context where potential external funding sources were much reduced, the evaluation suggested that in order to survive into the next phase, the organisation needed a stronger link to the teaching and learning agenda to strengthen its position within the University. Science Shop staff had reported finding working within academic departments challenging and in effect focused most of their efforts externally rather than internally. The key staff member also suggested that the lack of a champion for the project at a senior level was another of the issues which made it 'totally unsustainable without sufficient external funding'.

4.5   Conclusion

In conclusion, Science Shops may not have any control over where they are located and indeed some projects are moved around within HEIs over time. It is crucial therefore to build bridges both formally and informally across a range of different areas. It is also important to ensure that these linkages are both vertical and horizontal across the organisation and that senior staff are also linked into agendas as they are more likely to se where this work fits within institutional and government agendas.

5. LOBBYING AND POLICY DEVELOPMENT

Many Science Shops have found that contributing to the development of policy at all levels - from institutional to national and international - is helpful, 'in that we can shape the policy to ensure that our work is supported, and that related areas of endeavour help to foster a culture supportive to our work.' The work of individual network representatives in raising the profile of Science Shops with key policy makers at the European Commission (EC), particularly in the DG Research, has led to a number of projects being initiated, including the current PERARES project.

University staff and students were behind the first Science Shops in the Netherlands in the 1970s, bringing them to the attention to the Minister for Research. A Dutch professor working in Northern Ireland brought the Science Shop concept to Northern Ireland and the UK in 1980s, found an appropriate funding stream and made a successful funding application. One Northern Ireland Science Shop was instrumental in bringing the concept to HEIs in the Republic of Ireland, both through direct contact and through involvement in a Masters programme in Science Communication. Irish HEIs looked north but also west to models of service learning in universities in the United States. Links with the European Science Shop network fed into the knowledge mobilisation debate and the establishment of Science Shops in Canada. In the UK discussions around community engaged research contributed to inclusion of the impact and environment elements of the proposed Research Excellence Framework. In Belgium the establishment of Science Shops resulted from a question in the Flemish parliament to the Minister of Research around how much research had been done for CSOs in comparison to that done for private companies. Staff from Dutch Science Shops have made connections in HEIs across the world and the International Science Shop Network has members in many countries across Europe and beyond which fed in to the development of the EC funded PERARES project. This networking and lobbying has brought Science Shops to a point where is a broad awareness of the concept and practice of Science Shop type activities in higher education across Europe.

For most Science Shops lobbying 'is fundamental to survive'. However not all understood lobbying in the same way. For some, lobbying was a formal activity undertaken largely by making policy representations, for example to the European Commission during a formal consultation. For others lobbying was an ongoing exercise, involving both this type of activity, but also less formal routes. As one respondent commented 'we don't really lobby, but we do go to places where we know people with influence will be and we make presentations and talk to them afterwards'. It is possible that this kind of lobbying is more effective than more formal routes in some situations.

One UK Science Shop relates: 'Internally we lobby senior staff. Externally we lobby funders informally and raise awareness of our work by having a representative from our main funder chair a board for us. We also take opportunities where possible – such as hosting a funder's forum during our last conference where we also invited our own funder to raise awareness of our work. We work with the National Co-ordinating Centre for Public Engagement to assist with policy consultations and provide information for their lobbying work. We also use the international science shop network to progress local agendas.'

A member of the Dutch Science Shop network notes 'One needs to talk to every new person in power and make the case for a science shop again. I lobbied all over the globe. It is

important to have 'science shops' mentioned in all kinds of policy documents and talks by VIPs…We have (just one) inroad at the Ministry of Research... Through this contact we are also consulted on new draft work plans for EU work programmes. And our comments are also taken up in new versions of the draft!'

For other Science Shops EC funded projects such as PERARES are also useful in 'helping look at policy development and lobbying work I could do; and as more academic colleagues get involved, we will do a bit more lobbying and policy development within the University.' (Irish HEI). And for some the presence of staff on their Science Shop Advisory Board can be 'an important factor for the development of the Science Shop within the University.' (Dutch HEI).   Often it only takes one contact to make a difference 'Luckily the person of the Administration Department is pro-Science Shop and wants to help through giving advice.' (Dutch HEI)

One Romanian Science Shop pointed out 'informal lobbying work is one of our main activities. Usually we get little financial support but our partners are ready to support us in different ways'.

It can also be difficult to measure the outcomes of lobbying activities. As one Norwegian HEI stated 'We have engaged with lobbying work. We do not know anything about the results'. This is indeed one of the difficulties of lobbying and outcomes are not always immediate and obvious.

It should also be noted that many Science Shops did not engage in lobbying activities. As one Science Shop commented 'It is not easy to play chess simultaneously on different boards. Many Science Shops are understaffed and ….do not know how to give more priority to their strategic development within international, national, regional or university policies'.

In other countries such as the Netherlands and Ireland, lobbying has been very effective and has led a strong policy outcome, for example the requirement for all HEIs to strongly consider establishing a Science Shop. But for some institutions this is not necessarily seen as a successful outcome; as one respondent commented 'in some institutions the requirement to establish a Science Shop is itself seen as an impediment!' Generally speaking though it would seem that commitment from HEIs is necessary as well as a broader government agenda; imposed policy without prior discussion and agreement may cause as many problems as it solves.

6 GOOD PRACTICE FOR HEIs ENGAGING WITH COMMUNITIES

In terms of considering good practice for embedding Science Shops in HEIs, it is also important to consider how Science Shops can most appropriately work with CSO partners. The formation of successful partnerships has been critical to the success of Science Shops across Europe.

It was clear from the information gathered for this report that CSOs and local government organisations are experiencing the impact of cutbacks in public sector spending. Those working with disadvantaged communities are being hampered as their staff numbers and funding are being cut by government. Whilst this may potentially increase their need for Science Shop type services, it also leaves less time to work with students on research projects. Government economic measures decrease opportunities for CSO's to find resources and possibly even change the nature of the research questions which they are bringing forward. Competition also exists for funding with other organisations involved in science communication (which has become a political priority in relation to public acceptance of new technologies etc)

It is important therefore to be aware of the range of issues which CSOs themselves are dealing with. The beginning point is acknowledging that for CSOs it can still be difficult to access the resources of HEIs. There may still be a sense of an 'ivory tower' where it is difficult to address the research needs of CSO partners in any kind of coherent way. The role of Science Shops in providing a bridge between academic and community based knowledge is a vital one. In particular the capacity within Science Shops to *begin* with the needs of the organisation still represents a radically different working methodology for many HEIs who may be more comfortable with knowledge transfer type activities.

In terms of lessons learned by existing Science Shops, the most important is that communication is essential and that there should be clarity on all sides. Some elements of the project are not negotiable – for example there are normally curriculum-based timing issues as well as restrictions in terms of the type of research a student may carry out, and this needs to be clear at the outset. Often organisations will have a bigger question which needs broken down into manageable elements.. The host organisation needs to be clear about which elements of the project can be tackled and which may need to be left for another student. These facts are often written up into a contract or agreement.

Another important lesson is to ensure that the student is properly prepared and understands what may be required of them in working with a CSO. This can be done either formally, through training programmes, or informally through mediation. Potential ethical and sensitive issues need to be flagged up to ensure that the student has at least begun the process of thinking about how they might carry out the work. It is also important to ensure that the student is appropriately placed to carry out the project – this can cover everything from the reasons why they are interested in a particular piece of research to travel arrangements. Occasionally students may be discouraged from taking a piece of research forward if there are concerns that they might not be able to cope with it properly and it's important to do this before involving the CSO partner.

The student's academic supervisor (if they are not being supervised by Science Shop staff) is also a critical component, ensuring that both the student and the HEI work appropriately

with the CSO partner. Academics need to be briefed about what the CSO partner needs and they will also need to agree that a project meets both the needs of the CSO and the requirements of the academic curriculum.

In terms of communication directly with the CSO, it is also important that the Science Shop addresses both the restrictions on the student in terms of their curriculum, but also the fact that research results are not always predictable and that the results of the research might not necessarily be as they expect. CSO partners also need to be aware of their responsibilities in the research process and any commitments they make in terms of facilitating the student need to be thought out and have a time resource allocated to them. In order for the research to work fully, they also need to take responsibility for any elements to which they make a commitment.

If the Science Shop is depending on a supervisors and students' willingness, it is important to create a favourable climate or to convince them to carry out the Science Shops principle.

Science Shops should also consider ways in which student and academic research might best be communicated to CSO partners. In some cases, particularly where Science Shops are located in academic departments, a process of valorization takes place where the staff member takes the student's work and translates it into a format which will be much more accessible for the community organisation. In other Science Shops where staff do not have the expertise to do so, the student's academic report is the key deliverable for the CSO partner. In each case, it is important that the nature of the output is addressed at the start of the project. It is also important to follow up on the research, both to ask for feedback on the quality of the report (which can then be fed back within the HEI to academic staff and other interested parties) but also to examine whether there are further research issues emerging which subsequent students might carry out.

Ingredients for a good co-operation with a CSO are variable. Every Science Shop project is unique in the way that cooperation exists between other parties and persons. Stakeholders work, communicate, handle and even think within their own reference frame which challenges the intensive collaboration between them in a Science Shop project. Taking this into account, it is a challenge to define criteria for good practices for collaboration with CSO's.

The key criteria for all stakeholders are:

- **Transparency:** Make sure every stakeholder in the project knows what to aspect of the project, the process, the collaboration and keep them informed during the process.
- **Communication:** Make sure communication is clear and understood. Misunderstanding, misinterpretation leads to possible frustration and possible disillusions.
- **Motivation:** Motivation is partly key-factor for success.
- **Engagement:** Engagement, being connected, means communication, motivation, and leads to better collaboration and in the end to a successful project.
- **Support:** Having a structure, offering support, opening doors as an intermediary is fundamental to create the possibility for CSO projects to be dealt with in curriculum.

7   CONCLUSIONS

Whilst the Science Shop movement has continued to grow and develop both within Europe and across the world, in the current climate of economic uncertainty it is more important than ever that Science Shops should be firmly embedded within a policy context. As drastic cuts to HEI budgets are implemented in many countries, activities regarded as add-on are being reduced or removed and only core activities remain. In some cases this has already affected Science Shops. Several respondents mentioned the importance of finding a national policy driver which might help to make their case. In some areas, Science Shops were able to gain momentum or traction from changes within the country's policy. This helped make the case internally for Science Shops.

Although public engagement is a critical element of Science Shop working, the contribution Science Shops can make to core HEI agendas in terms of both research and education is apparent; indeed the prevailing view is that in order for Science Shops to maintain their position in HEIs they must contribute to the core activities of teaching and learning. In the current climate, it is important to ensure that these links are made clear both internally and externally to the institutions. Embedding Science Shops within HEI policies and within HEI curricula can only help to strengthen their sustainability. The process of being written into sub-policies is often easier if it is written in at highest level within the HEI – for example in the mission statement, operational plan or corporate plan.

In the survey which forms the basis of this report university based Science Shops were located in offices for Communications, Student Affairs, Research, Cultural Affairs and Science Communication, which reflects the flexibility of the model and the different ways which it can be utilised in different organisational contexts. It is clear that some Science Shops may not have control over where they will be located within their institutions, and some have a history of being moved within their institution. This reinforces the importance for Science Shops of building links both formally and informally across institutions and reflects the different agendas which Science Shops can respond to within Higher Education.

Finding the right champions both within government and within the HEI also emerged as important in effecting policy change to support Science Shops. In some cases this might not be the person with direct responsibility for this area of work but rather someone with either a personal or a research interest in it. Consequently it is also important to ensure that the good work done by Science Shops is clearly communicated, both within and outside the university. As one respondent commented, 'It is very important that Science Shops are visible. We always try to organise project meetings and debates with the people concerned outside the university. Media attention to Science Shop research projects contributes to more exposure' and it is important to showcase 'appealing Science Shop projects' which will attract media attention. (Dutch Science Shop). This in turn may impact on both institutional and regional support for Science Shops.

International policies, such as those developed by the European Union, have been critical to the success of the Science Shop movement across Europe and in influencing national policies both within the EU and further afield. What is notable however is that there is not necessarily a clear connection between different directorates in the EC which would facilitate the development of collaborative policies to support initiatives such as Science Shops whose activities are complex and have threads in many different directions. Consequently Science

Shops need to understand what the policy drivers are across a range of areas and this can be both time-consuming and challenging

The key factor coming through in the studies for this workpackage report is that policies do not exist in isolation but can be influenced and developed by individuals. This can happen on a formal basis via submitting responses to consultations, and indeed Living Knowledge as a network has had some notable successes with this. However it can also happen informally and it is important to ensure that Science Shop agendas are represented in as many different fora as possible.

Policies are created when individuals understand the vision for an activity or area of work and can see the links with other key priorities. Policy change is therefore something that everyone can contribute to. Lobbying at all levels is a critical part of this process as strategic thinkers and influencers need to understand the vision for Science Shops. Many Science Shops have been lobbying for several years on the concept of HEI-society cooperation. Target groups include CSOs, university staff, local authorities, politicians, regional scientific communities and policy makers. But some feel that both academics and politicians still need convincing about the practical benefits of a Science Shop for them and for the students.

While continued lobbying is fundamental to the survival of Science Shops this study suggests that many Science Shops do not engage with the policy context. For some a lack of staffing means that they feel they do not have the time to devote to policy work. Others are not sure how they can influence strategic developments either within their own institutions or beyond them.

The results of informal lobbying are often not easily identified and may not take effect immediately. It can be difficult to identify whether or where influence has been felt. However those Science Shops that are fully embedded in policy tended to undertake informal lobbying on a regular basis, which would suggest that this is an effective tactic. It is also the case that such informal lobbying can help to ensure that when outside threats do present themselves, there is a strong defensive position in place.

8.   RECOMMENDATIONS

For Science Shops

When establishing a HEI based Science Shop consider how the project will connect to *all* existing policies and strategies. The distinctive thing about Science Shops is that they meet the needs of HEIs, curriculum development, student skills and employability, research impact, science communication, and societal needs in a cost effective way.

Build links both formally and informally both across the institution and with senior management. The location of a Science Shop within the institution is not critical; the degree of connectivity is.

Be aware of policy development and lobby formally and informally at all levels.

Become familiar with the agendas of government and of senior staff members within the HEI and lobby any who might be sympathetic to the Science Shop cause. Consider lobbying as an ongoing task.

Keep up to date with national policies and utilise them to make the case internally. When policies are being written, provide feedback where possible.

Respond to policy consultations; sometimes changing just a few words can create an opportunity. Do not assume that you can not make a difference at a policy level.

Ensure that the work of the Science Shop is visible by using communications office, contacts in the local press etc and ensure that people with influence know and understand the work of the Science Shop; public perception can influence the development of public policy.

Persistence and commitment are essential; it can take time to convince key people of the relevance of this type of work which can in turn lead to policy change.

When a policy gain is made, it is important to monitor its implementation.

For Living Knowledge network

Follow up with EC DG Education on progress regarding partnerships with CSOs and consider other mechanisms for meeting DG Education agendas through Science Shops.

Further enhance knowledge of key strategic drivers as well as core agendas within teaching and research at an international level.

Continue to work with DG Research to explore opportunities to embed PE agendas.

Draw up brief policy papers to be presented to appropriate national bodies where Science Shop work may contribute to their agendas.

Utilise Living Knowledge conferences to develop policy discussions which build on the success of international partnerships.

Consider inclusion of brief session on policy/lobbying into Science Shop Summer Schools to ensure that new and emerging Science Shops develop an awareness of the importance of policy.