The Royal Society of Edinburgh

FUNDING OF SCIENCE AND DISCOVERY CENTRES

Executive Summary

1. Science Centres have developed an increasingly important role in stimulating public interest in science and technology, particularly in young people. To succeed, they require to be properly funded and well run. To ensure the long term future of these centres, there is a need for:
   - an independent evaluation of their performance in meeting their core science and society objectives. This evaluation process may require the establishment of a national monitoring panel;
   - an adequate and diverse funding base, in order achieve their objectives of stimulating interest in science and technology. While they need to be run in a business-like fashion, this should not distort their objectives of providing high quality science education and in stimulating public interest in science and technology;
   - more focused objectives for the public funding provided to Science Centres. They have a case for recurrent public funding because they are already providing a public benefit, as is reflected in their charitable status. Failure to secure adequate funding will result in these Centres declining, propagating a negative message about science and technology that would be counter to Government objectives for science and society.
   - differentiation between Science Centres and scientific collections[*]. It is important to recognise that Science Centres are complementary and not a substitute for the work undertaken by science collections which, being part of the national heritage, must also be properly supported. In this context, it would not be helpful for there to be competition between the science centres and collections.

Introduction

2. The Royal Society of Edinburgh (RSE) is pleased to respond to the House of Commons Science and Technology Inquiry into the funding of science and discovery centres. These comments have been compiled with the assistance of a number of expert Fellows of the RSE, under the direction of the Vice-President, Professor John Mavor.

3. While there are several organisations with expertise in science issues and a public interface in Scotland, including the science collections of the National Museums of Scotland, the Royal Zoological Society of Scotland and the Royal Botanic Garden Edinburgh, in addition there are four generally recognised 'science centres':

[*] Scientific collections include scientific artefacts, geological specimens and preserved plants, animals and other organisms held by museums. They also include the living collections of animals and plants held by zoos and botanic gardens respectively, and the preserved collections of plants held by herbaria, often, but not always attached to botanic gardens or museums

- Satrosphere Science Centre, Aberdeen;
- Sensation, Dundee;
- Our Dynamic Earth, Edinburgh;
- Glasgow Science Centre.

4. The above Science Centres were originally created with support from Scottish Enterprise (Scotland's economic development agency), for a range of motives including a stimulus to local economic regeneration. As a result, several of the sites made available were not ideally located for attracting the public. The capital funding to create most of these Science Centres mainly came from the National Lottery, Scottish Enterprise and EU sources. In addition, the Wellcome Trust gave considerable support to Sensation in Dundee and to the Glasgow Science Centre. In order to secure this capital funding, it was necessary to present business plans that did not assume recurrent funding from these sources for operating costs. In practice, these business plans proved overly optimistic, particularly in relation to the number of paying visitors. Recognising the difficulties facing the Science Centres, the Scottish Executive has provided financial support without which, it is believed, that three of the four science centres would not have survived (The Jura Report: 2003).
5. A distinctive feature of the Scottish scene as been the creation of a Network of Science Centres. This is understood to be Europe's first national network of science centres. Although each of the Science Centres is legally autonomous, there was early recognition of the benefits of collaboration and complementarity. The Scottish Executive sees these science centres as a valuable asset in helping to promote science education and in symbolising Scotland as a pro-science, pro-enterprise economy. In 2004/5, the Scottish Executive provided capital investment of £1.5 million, and revenue support of £0.6 million to these centres. From 2005/6 onward a budget of £3.7 million has been provided on a basis consistent with the aims and objectives of the Scottish Executive's 2005-09 Scottish Science Centres Network strategy.

The Role of Science Centres in public engagement and attracting young people to science subjects and scientific careers

6. In 2002, the HM Inspectorate of Education undertook a review of Scottish Science Centres and found that their contribution to formal science learning was greatly valued by schools, especially primary schools and complemented and enriched, rather than duplicated, pupil's school science learning at both primary and secondary school levels. Whilst there was variation across the different centres, several offered a programme of workshops and talks tailored to the 5-14 science curriculum, and were exploiting ways of developing further links with secondary schools. The report found that most centres had worked with teachers and other education sector representatives to ensure the exhibits met the needs of pupils. A follow-up report from the 2002 HMIE has been commissioned by the Scottish Executive and should be available by July 2007, which should provide part of the evidence for evaluating the level of success of these Centres. Reviews of other aspects of these centres will also be required.

7. In terms of public engagement, the 2002 HMIE review indicated that most of the centres provided the public with access to topical science matters and current research through well-chosen exhibits, talks and presentations. Many visitors to the centres were very positive about their experiences and the extent to which their scientific horizons had been expanded. It is noted that science centres promote both science and technology, which are distinct but interdependent, but that this is not always recognised or acknowledged.

8. The RSE would recommend that there should be independent evaluation of their performance in meeting their core science and society objectives. This evaluation process may require the establishment of a national monitoring panel (see para. 18).

9. Science Centres and scientific collections both have a potentially important, but distinct and different, role to play in underpinning the knowledge economy by promoting science and technology both in our young people and with the public at large. Scientific collections, in particular, are extremely valuable as educational tools, but their curatorial and research roles are equally important and need to be supported. Care needs to taken, therefore, to recognise these latter roles, and ensure that collection, interpretation and curation of scientific collections are not sacrificed at the expense of having to provide the same kind of experience as science centres.

The funding available to Science and Discovery Centres from central Government

10. Science Centres have a good case for recurrent public funding because they are already providing a public benefit, as is reflected in their charitable status. The Jura Report (2003) concluded that Scotland's Science Centres would not be able to operate without long-term continued revenue funding from the Scottish Executive.

11. A particular issue for science and discovery centres is the need to refurbish and renew their exhibits more frequently than museums and similar collections. This arises both from the considerable wear and tear which interactive exhibits suffer, and the need to regularly provide new exhibits to attract repeat visitors. The need for frequent renewal of exhibits creates a major funding challenge for science centres. Without regular renewal and maintenance, not only do visitor numbers fall but Science Centres will fail in their public objectives of engaging large numbers of people in science and technology.

12. One other positive role of Government funding is the provision of an overarching co-ordination and collaboration strategy to help share best practice, drive up commercial performance, and provide a more cohesive approach to science education. However, the current Scottish network strategy seeks for these Centres to meet 12 separate goals, whereas if these were fewer in number, it could allow a more focused approach.

13. Owing to the differing objectives of Scotland's museums and Science Centres, they are funded by different parts of the Scottish Executive and hence public funding need not be in competition.

Alternative sources of funding and ways of supporting the long-term future of science and discovery centres

14. World-wide, experience has shown that it is extremely difficult for a science centre to be self-supporting, covering their running costs from income taken at the gate, even with additional help from a shop or café. Depending upon the location and design of the Science Centre, there may be opportunity to generate revenue through hosting conferences or corporate entertainment. However having added attractions, such as an I-Max Cinema, need to be carefully planned in order to avoid greater running costs than the income they generate.

15. Individual exhibits and activities may attract business sponsorship, or be covered by grants from various trusts and, properly handled, this can enhance the content of the centre. However, particularly in the case of business sponsorship, care needs to be taken to avoid this leading to superficial and inappropriate exhibits of little real scientific merit. Moreover, as far as exhibits are concerned, it is important to build-in any necessary maintenance costs, which will be ongoing for the life of the exhibit.

16. In general, core-costs such as salaries are not attractive to sponsors, and have to be covered by other income. Help is sometimes available from local authorities and universities in the form of secondments, but the problem of paying the bulk of the staff remains, unless offset by funding from Central Government. Where no, or inadequate, government or local authority help is available, then Science Centres, in striving to sustain gate income, will tend towards providing low-level entertainment rather than education. Overall, these centres need to exhibit good business practice but this should not be at the expense distorting their provision of science education and the stimulation of public interest in science and technology.

17. One factor which seems to be common to all the UK centres - and related to their remit to be self-financing - is the relatively expensive entry to the facilities, with charges ranging from £6 to £9 per adult and £4 to £6 per child. This is prohibitive to many less affluent families and the 2002 HMIE Review of Science Centres found that primary schools wished to visit Science Centres more frequently but were prevented by the cost of entry and transport. These costs prevented many schools from visiting the centres at all and the centres would be much more effective if the cost of entry, or school visits, were subsidised. As a result, the Scottish Executive has provided funding to Science Centres for the last two years to assist schools travel costs in attending. If, as a matter of policy, entrance fees were reduced significantly or eliminated, to enable education and public engagement roles to be increased, greater funding from the Government would be needed, not only to compensate for reduced income, but also to allow for the increased wear on exhibits and increased staffing required.

18. For Science Centres to succeed, they need a proper funding base. The worst outcome would be for them to decline slowly, as it would propagate a negative message that science was shabby and run down, at a time when the Government is seeking to create the opposite impression. In such a situation it would be better to close failing centres quickly and provide a concentration of funding to allow the best to survive.

19. To assist in the monitoring of public funding and of the achievements of these centres nationally, as well as to encourage improvement and the spread of best practice, there could be merit in an independent national monitoring panel, comprising individuals with experience in promoting public engagement in science.

Additional Information and References

20. Any enquiries about this submission should be addressed to the RSE's Research Officer, Dr Marc Rands (email: evidenceadvice@royalsoced.org.uk).

Review of the Contribution of Scottish Science Centres to Formal and Informal Science Education. HM Inspectorate of Education (November 2002)

The Scottish Science Centres Network: 2005-09. A four-year strategy developed by the four Scottish Science Centres in Partnership with the Scottish Executive (2005). Scottish Executive (www.scotland.gov.uk/Publications/2005/12/06113103/31040)

The Jura Report: Development of the Concept for a National Science Centre (March 2004). Jura Consultants, commissioned by the Scottish Executive.

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