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FORESIGHT

Response to consultation document

The Royal Society has been following Foresight closely since the 1994 White Paper *Realising our potential* first proposed that it become part of the science policy process in the UK. We are conscious both of the benefits and of the potential drawbacks of Foresight, and have commented on each. The new Government rapidly made clear that Foresight in some form would play an important role in its thinking. We therefore welcome this opportunity to respond to the detailed proposals in the consultation document about the next Foresight exercise.

We also welcome the summary, on pages 6 - 7 of the consultation document, of the lessons to be learned from the previous Foresight exercise. The points about broadening participation, promoting interactions between panels and between the various sectors involved, and thinking globally and long term will be central to the success of the next exercise. Getting these things right is more important than concentrating on specific predictions.

This response has been prepared by a group chaired by Sir Eric Ash, with inputs from Professor Julia Higgins, Professor Cyril Hilsum, Professor Mike Kelly, Professor Kevin Kendall, Dr Bob Moor, Dr George Poste, Professor Peter Raynes and Dr Mike Stowell. It has been endorsed by the Council of the Royal Society.

1. THEMES

In principle, we like the idea of having broad themes such as the consequences of an ageing population, social cohesion, sustainability and public understanding to complement the thinking of panels based on disciplines or sectors of the economy. In practice, whether themes are useful will depend on how they are chosen and on how they are handled.

The panels lie at the heart of Foresight. They, working with the Foresight Steering Group and reflecting on the evidence arising from their consultations with their various audiences, are best placed to identify themes likely to prove fruitful. If themes are specified at the outset, they may prove to be a constraint rather than a source of vision.

All the themes just mentioned, and many other potential themes, are already the subject of substantial initiatives. The insights from these initiatives must be integrated into any further work on them under the Foresight banner.

Setting up separate groups to deal with the themes, and even more to 'set challenging agendas for sector panels to address' as the consultation document suggests, is not in our view the way to do it. If, as we propose, the themes emerge from the panels, then it is for the panels to deal with them. At a defined point in the exercise, the Steering Group should consider which emerging themes appear to be most fruitful and invite each panel to take explicit account of those that may impact on its remit.

It is important to avoid further downplaying of the technology dimension - it is of considerable concern that the decision to drop 'Technology' from 'Technology Foresight' was taken with so little consultation. If the exercise becomes too broad, it will lose focus and may lose the attention of some key sectors. The White Paper themes of wealth creation and quality of life, and the science and technology needed to underpin them, are already very broad.

2. SECTOR PANELS

There is more than one valid way to define the number and remit of the panels. The number of panels will need to be determined pragmatically, ie in terms of what it is practicable to support and coordinate and in terms of effective follow-up action. We agree that cognate panels should where possible be merged - this will make it easier to handle the broader themes. What is important is that the total coverage should be reasonably comprehensive, that interfaces between panels are actively managed and that significant topics and audiences are not missed. Some of the areas initially omitted in the first exercise, such as marine biology and tropical medicine, have been disadvantaged subsequently, without good cause.

The panels from the first exercise have continued actively to pursue their missions with numerous initiatives. This work is not complete. If there is substantial change in the make-up of the panels, care will be needed to ensure that existing work can still be brought to a satisfactory conclusion.

The Government has repeatedly stated the high priority it attaches to Foresight. It must therefore provide the resources to conduct the exercise properly. The first exercise was weakened by lack of adequate professional and secretarial support for the panels. If that lies beyond the present capacity of OST, then OST must be given additional resources. There may well be a case for providing some of the additional resources in a way that enabled OST and other Departments to collaborate in running particular panels. There is no case for inviting Trade Associations, Research and Technology Organisations and similar bodies to take primary responsibility for running individual panels. The perceived self-interests of such bodies could jeopardise the success of their panels; and any panels run from outside Whitehall could be thought to be marginal to Government thinking.

Care must be taken in determining the membership of panels. Members should operate as individuals, not as representatives of particular interest groups (including their employers). They should be encouraged to consult their professional colleagues at all stages. Indeed, panels would be all the more effective if it were known that the opinions of individual members were supported by their professional colleagues. Secrecy is to be discouraged as tending to be divisive between panel members and their colleagues. Panels must be free from all political or commercial pressure.

3. THE KNOWLEDGE POOL

The proposed 'knowledge pool' is an interesting idea that may well prove valuable. If it is run as much as possible on the internet, it should prove a good way of stimulating interest and engagement in Foresight, and certainly a more cost-effective approach than the Delphi studies used last time. It will also enable individuals and organisations to be aware of, and contribute to, discussions outside their own mainstream areas, thus facilitating cross-fertilization of ideas.

It remains to be seen whether commercial companies will be willing to put elements of their strategic thinking into the pool. Such material tends to carry competitive advantage and therefore be closely guarded. This is, of course, a consideration for Foresight as a whole, not just for the pool, but the necessarily public nature of the pool may increase companies' reluctance to share material.

The pool must be more than an unfocused accumulation of data if it is to be of any use. It will need very careful design and management so that it can contribute both to individual panels and to Foresight as a whole. This has major resource implications. If OST is already concerned about being able to provide proper service to the panels, it should hesitate to take on this extra commitment. An inadequately resourced pool would produce confusion and cynicism, not creative insight.

A further, important, consideration is quality control over the material going into the pool. It will not be easy simultaneously to encourage open participation, to keep standards high and to allow space for creative but unorthodox thinking.

4. COMMUNICATING AND ACTING ON THE RESULTS

The next round of Foresight should make specific efforts to reach four target audiences that the first round largely failed to engage. 'Reach' does not only, or even mainly, mean 'communicate the findings to': the *processes* of Foresight can have enduring value even when the *predictions* have run their course, so these four audiences must be engaged in the processes if Foresight is really to make a difference.

- Generalists in the larger companies - the first round reached the technical experts, but few major Boardrooms have discussed Foresight at any length. Unless Foresight can persuade companies that innovation is essential for the future of the technical base, it will become irrelevant. The next round must focus on this and must involve city analysts and financiers, and managing and financial directors of the large companies.
- Generalists in all Government Departments. The trans-Departmental groups that have been established at ministerial and official levels may help this process: the June 1998 *Foresight progress report* presents encouraging evidence of positive developments in this respect. A genuinely cross-Departmental approach is vital: Foresight is not a matter primarily for DTI.
- Managements of SMEs.

- The 'general public', which is central to Foresight partly because social demands create market opportunities and partly because we have to understand the social forces that determine whether and how technological developments will be assimilated or rejected. This means that the public must both be involved in the conduct of the exercise and be one focus of dissemination.

There will be many ways of reaching each of these audiences, depending on the message being disseminated. Written reports and plans are important, but are far from being the only form of output. In some cases follow-up action may centre simply on fostering the networks that have been built up during the exercise. In others, it could require vigorous promotion of specific findings. The process must take account of the scope and timescale of the message.

All outputs must be based on careful assessment of evidence: the action plans and 'agendas for action' envisaged in the consultation document could, if produced too early in the Foresight process before the evidence has been assimilated, impede rather than help the conduct of the exercise.

It is important that follow-up is not seen primarily as a matter of implementing narrow, short-term priorities, especially for Science Base research. Within the Science Base, the scientific excellence of a research proposal must be much the dominant factor in allocating resources. A successful Foresight exercise will be looking 20 years ahead; such a perspective does not readily lead to top-down research priorities for the next financial year.

The overarching summary document needs to be considered very carefully. It must grow out of the work of the panels and add real value to their visions and priorities, not simply superimpose pre-existing priorities of the Steering Group. Such a document cannot be written in a hurry.

5. TIMETABLE

The first exercise was conducted under severe time constraints. The sense of urgency was useful in maintaining a high priority for the exercise, but it meant that consultations and data analysis had to be curtailed. This caused particular problems in areas without established, inter-connected communities. Moreover, the compressed timetable prevented detailed exchanges between panels, which could have led to important insights on common themes such as the role of regulation in shaping future developments. The final report of the Steering Group would have been enriched by the outcomes of such exchanges.

The timetable proposed for the second exercise is a little better, but still too tight. More time is needed to develop the knowledge pool and to allow panels to learn how to make best use of it. More time is also needed to expose emerging findings to public criticism. Much will depend, of course, on whether OST and other Departments are able to allocate adequate staff resources to the exercise. A second limiting factor will be the panel members, who will be drawn mostly from the active leadership of the sectors and disciplines concerned. Additional, voluntary calls on their time from activities such as Foresight will need to be paced so as to allow for their primary, remunerated, commitments.

6. GENERAL COMMENTS

There is a European, and indeed global, dimension to improving wealth creation and quality of life, even from a UK perspective. This raises various issues for Foresight, such as how the exercise can capture non-UK input, how the UK Foresight vision can and should interact with the vision of other Member States or of the EC itself, and how the benefits of the exercise can accrue to the UK when large elements of it are conducted via the internet.

The effort put into Foresight, especially by the many contributors who are giving their services for free, should be commensurate with the resources that will subsequently be made available to take forward the results. If there is little new money and only slight re-prioritization of existing money, it is not appropriate to conduct a highly elaborate exercise. Follow-up should include an assessment of the cost-effectiveness of the exercise. How this might be done should be considered at the outset.

At the end of the first Foresight exercise, the Steering Group noted that 'many panels insisted on the need to retain a broad range in the UK's support for excellent basic research, particularly by selectively targeting the best people, as judged by their peers', and concluded that it would be vital to 'maintain support for truly excellent basic research (whether in a Foresight priority area or not) on a selective basis'. A Science Base that can compete strongly in an international setting, and an emphasis on scientific excellence as the dominant criterion of resource allocation within it, are crucial. Without these, the UK will be unable to accomplish the scenarios that Foresight will put before us.

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