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postnote

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FUTURES AND FORESIGHT

In 2007, the Commons Public Administration Select Committee (PASC) suggested that Parliament strengthen its capacity to think ahead and engage with outside experts and the wider public. This POSTnote examines the key characteristics of futures work and its current use by governments and parliaments. It covers futures work at national and local levels, and the extent to which it needs to consider social and other trends alongside developments in science and technology.

Why Look to the Future?

The 2007 PASC Report stressed the need for governments to take a long-term view, as choices made today impact on the lives of future generations.[1] However the short-term nature of the electoral cycle and the limits of departmental boundaries make it difficult to address long-term and inter-disciplinary challenges. The limits of projections of future trends using past data, as illustrated by the current economic recession, combined with the inherent uncertainty of the future, suggest the need to focus on medium to long-term time horizons as the context for short-term responses.

Key Characteristics of Futures Work

Futures work such as strategic planning, technological forecasting and economic analysis emerged in decision-making contexts in the 1950s through efforts to rebuild nations after the Second World War. It was applied in US military strategic planning with the RAND Corporation, and in land use planning in France. The field developed in the 1960s when Shell and General Electric introduced futures into their corporate planning to identify new markets and to create new products. More recently, the use of such methods in policy has grown due in part to:

- unexpected events such as foot and mouth disease, flooding and economic crises;
- the increasing rapidity of social and economic change;
- the complex nature of contemporary problems such as obesity, climate change and social exclusion.

The terms "foresight" and "futures" are largely inter-changeable. They refer to systematic and purposeful processes of future-oriented deliberation between participants with a view to identifying actions to be taken, or goals to be pursued for better future outcomes. Such approaches usually include three main elements: anticipation, participation and action (see Box 1). They offer techniques to think beyond normal planning horizons to spot potential discontinuities from current trends. Futures thinking can identify opportunities and risks which would not otherwise have been considered and help policy makers identify strategies that are robust to a variety of outcomes, to examine the unintended consequences of policy options and to shape long-term action. They do not displace existing processes, but can complement them and increase their effectiveness.

Box 1. Key Aspects of Futures and Foresight

- **Anticipation** - Futures and foresight activities identify plausible future developments by systematically monitoring potential threats and opportunities through "horizon scanning." The Cabinet Office's Strategic Horizons Forum together with the Foresight Horizon Scanning Centre (HSC) based in the Government Office for Science, is conducting a broad horizon scanning exercise for the first annual update of the *National Security Strategy* in summer 2009.
- **Participation** - Much futures work uses participative processes since it appreciates knowledge is widely distributed. It can involve public authorities, business, research organisations, non-governmental organisations, and the wider public. Participation can also increase support for, and implementation of, the outcomes.
- **Action -** Foresight anticipates plausible future events and feeds insights back into the policy process to help decision makers take action. This can be a one-off activity, but is more effective if part of a continual process of challenging both the ends and means of policy. Action can take a variety of forms, for instance, framing policy goals, creating an organisational vision, setting research priorities, building networks or aiding participants to develop or adjust their own strategy.

Methods

There are many foresight and futures methods. *Scenarios* are plausible descriptions of what might happen in the form of a set of stories about the future. A key use of scenarios is to help people to realise that the future is uncertain and to think about flexible options and strategies that will be robust to different futures. They are

used worldwide and can be developed and deployed to shape and test key strategies and policies, to anticipate risk and opportunity, to identify desired outcomes, or to build relationships. Another widely used futures method is *trend analysis*.[2] The use of other methods varies more widely. The *Delphi method*, an anonymised survey, usually of 'experts' on the future likelihood of certain events, was developed in the US and has been used since 1971 in the National Technology Forecast Survey in Japan. Futures Workshops, which involve presentations and discussions on a particular subject, are favoured in the US and UK.

Futures methods can be supported with quantitative techniques (such as modelling or simulation) and participative processes (such as workshops, citizens' juries and gaming). To gain most impact the method(s) chosen will vary depending on the problems at stake, the resources available and the political context.[3]

Approaches

Approaches to futures work lie on a continuum between:

- Expert-driven, where expert "evidence" about the future informs debate on longer-term strategic issues. However, use of expert opinion can lead to images of the future that appear incontestable and downplay the assumptions and uncertainties they are based on.
- Participatory, which are more interactive and more likely to challenge the assumptions of expert knowledge. They take into account a greater number of views and place more emphasis on uncertainties and inter-relationships. This may increase legitimacy but is more time consuming and complex to organise.

All approaches can be "product" oriented, for example where there is a need to inform specific decisions, or place more emphasis on the "process" (e.g. to establish dialogue between participants). Approaches can be combined, depending on the precise objectives.

UK Sponsors and Users

Government, business and research communities all sponsor futures work. The European Foresight Monitoring Network is the most comprehensive database of futures activities available but is biased towards science and technology (S&T) foresight and national level activities. It shows that the government funded 75% of UK futures work, and that 70% of all projects made policy recommendations.[4] Government departments are advised to conduct and act upon the evidence of horizon scanning.[5] They are supported by the Foresight Horizon Scanning Centre (HSC, see Box 2). Government agencies and departments using futures work include: the Cabinet Office; Natural England; Defra; Department for Transport; Ministry of Defence; Defence Science and Technology Laboratory; and the Health and Safety Executive.

National Foresight

Most industrialised countries conduct national foresight exercises of some form, driven by the escalation in industrial and economic competition and increasing pressures on government spending. The European Commission (EC) has been influential in promoting technology foresight by supporting Candidate Countries to develop a full Foresight capability. Most public foresight programmes in the 1990s had a technology focus with participation limited to experts in nominated fields. There has been a trend towards increased participation and the inclusion of broader socio-economic challenges. This is likely to continue and can be seen in the different phases of the UK Foresight Programme (see Box 2) and is also apparent in Germany and Japan. The UK is well positioned internationally, and foresight programmes in Europe, US, Japan and Latin America have been inspired by the UK Foresight Programme. UK groups also play a key role in foresight projects and networks funded by the EC. The 2007 PASC report commended the work of Foresight and noted it was recognised as a world leader.

Box 2. UK Foresight

Foresight was launched in 1994, after recommendations in the 1993 *Realising our Potential* White Paper. It was established to improve the relative performance of UK science and engineering and its use by government and society. Now based within the Government Office of Science in the Department for Innovation, University and Skills, the Foresight Programme has evolved through three phases. While the first cycle emphasised setting S&T research priorities, the second took a wider aim to exploit the opportunities that arose from the interaction of innovations in S&T with wider social and market trends. The third (current) phase began in 2002 and refocused on S&T, with projects relating either to a key issue where science holds the promise of solutions (for example flood risk management); or an aspect of S&T that is likely to have wider implications in the future (such as the electromagnetic spectrum). Projects from this phase have included "Future Flooding" (2004) which shaped the government's strategy *Making Space for Water* (2006) and "Tackling Obesity" (2007) which led to a new cross-government strategy on obesity, *Healthy Weight, Healthy Lives* (2008).

Foresight also hosts the Horizon Scanning Centre, HSC, created in 2005 to feed futures work into departments across government. To date it has carried out over 30 short projects with twenty different departments to introduce horizon scanning into a wide range of policy areas, including an International Futures Project on behalf of a cross-departmental Permanent Secretary-level strategy group to develop scenarios for use by government.

One of the merits of broader models of foresight is their ability to take account of scientific, economic, social and environmental factors in fields such as nanotechnology and regenerative medicine. For example, the Danish Environmental Protection Agency (EPA) undertook a foresight project into the future of the hybrid electric car, looking at its environmental impact compared with a traditional combustion engine. It found that the overall impact depended on which cars were developed and sold and whether they replaced more fuel-consuming cars, or were added to other cars in the household.[6] Awareness of the continuous process of technological development can help regulation to shape innovation and allow emerging markets to stabilise. However to be effective, technology foresight must be sensitive to institutional and technical commitments, recognising where these can be shaped and where they are already entrenched. Technology foresight may also prioritise cutting-edge S&T (nanotechnology, genomics) at the expense of exploring whether existing technologies (e.g. nuclear energy or organ donation) can be further developed/ exploited.

Public Participation

While it is commonly accepted that foresight should mobilise broad sets of participants, the extent to which this should include wider publics is contested. Public participation in S&T foresight overlaps considerably with the more developed methods of participatory technology assessment methods (PTA) which have been increasing across Europe and world-wide since the 1980s. PTA emphasises the interaction of technological, social and environmental factors, and invites wider public participation to highlight possibilities for shaping new and emerging developments. Rather than focusing on questions of prediction or risk in the application of new technologies, PTA aims to broaden discussion to the visions, ends and purposes S&T are put to.

The government's 10 year strategy for science and innovation includes a commitment to enable public debate to take place "upstream" in the S&T development process before commitments are already in place.[7] However, a 2006 evaluation of the UK Foresight programme found that public engagement had been seen as an "end-of-pipeline" activity and recommended most projects would benefit from an element of public participation before they were completed, drawing on the methods of technology assessment.[8] However, public participation in S&T development is not an end point in itself and evaluation of the UK National Consensus Conference on Plant Biotechnology (1994) and Citizen GMO (1998) found that they:

- focused on technical issues and building consensus rather than opening up topics for wider debate;
- made no impact on either public or private policy, since no formal link fed the issues into policymaking.[9]

Where public engagement is sought, it is more effective if it allows problem-setting, open debate and reflection on science in society, rather than focusing on technical issues. Further, engagement that has no visible impact on policy results in a loss of interest among all participants.

Regional and Local Foresight

There has been a long term drive towards increasing the capacity for regional strategic planning since town and country planning began to develop in the late nineteenth century. More recently, a move towards greater user-centred and demand-based approaches to S&T innovation, alongside increasing devolution of political authority to the regions, has led to the establishment of Regional Development Agencies and Observatories. For instance Yorkshire Futures aims to increase the economic competitiveness of the region and consider its long-term development, and has recently commissioned a piece of work on 30 year scenarios for the region.

The Local Government Act 2000 gave authorities broad new powers to improve and promote local well-being. It contained a statutory requirement for local authorities to develop a 20 year Community Strategy to promote and improve the economic, social and environmental well-being of their areas. In 2001 this was strengthened by the Local Government White Paper *Strong Local Leadership*. This called for local councils to develop strategies for sustainable development that take account of the needs of future generations. Local authorities are already required to engage with local communities in developing and delivering regional policies. Futures techniques have been usefully employed in achieving this. A number of local authorities have conducted broad futures work to inform their overall strategic planning for spatial and economic regeneration and service planning, for example Wakefield Metropolitan District Council.

The emphasis on participation in foresight means that it is well adapted to the local and regional level, where a wide array of participants can actively be involved to build a vision of possible regional futures. Local Area Agreements and Multi Area Agreements bring together key players for public services within localities, including health, police and the voluntary sector. Local foresight exercises allow solutions which fit the specifics of local circumstances, such as demographics and economic factors. The Local Government Association represents local government nationally and provides support to help local authorities integrate foresight into their strategic planning. It recently commissioned a futures project with the Foresight HSC to look at the future of public services and to help "future proof" local strategic planning.

Futures Work in Parliaments

Futures work which occurs in legislatures is sometimes referred to as public interest futures. Unlike early models of national foresight in governments, these are often driven by social problems or trends and include S&T only as one aspect of broader issues, if at all. The 2007 PASC report[1] suggested that the government should not be the only body framing debate about the future. It highlighted the amount of forward-thinking work already done within Parliament. However, it suggested that a forum modelled on Finland's Committee for the Future or Scotland's Futures Forum (see Box 3) could increase Parliament's capacity to engage with outside experts and the wider public. This could also further the Commons Commission's objective to promote public knowledge and understanding of the work and role of Parliament through provision of information and access.

However, the PASC report noted that a futures forum should not be seen as a substitute for the important work undertaken by Select Committees. While it could enhance the informal methods already used outside of the expert hearing process by Select Committees to engage wider audiences and access a broader knowledge base, careful consideration should be given to the exact role and purpose of any such structure[1].

Experience in Parliaments elsewhere (Box 3) suggests that different models have pros and cons and that cultural context is important. For example in the Finnish model, S&T plays a major role and public participation is largely confined to web dialogue. In contrast, the Scottish model does not focus on S&T and carries out extensive public engagement. Both are regarded as a success in their countries, but some have argued a traditional committee (Finland) is not sufficiently innovative, while others see the lack of a policy prescription (Scotland) as a disadvantage.

Box 3. Parliamentary Futures Work

Finland's Committee for the Future

The Committee for the Future was set up as an *ad hoc* committee in 1993 after Finland joined the EU. It consists of 17 Members of Parliament and achieved permanent status in 2000. Its main task is to conduct dialogue with the Prime Minister's office and the government on long-term issues affecting the policies and work of the government. To date, it has examined issues surrounding demographic change in Finland, energy policy, regional policy, GM crops, the impact of ICT on older people and climate and energy.

In its second year of office following a general election, the Finnish government is required to produce a "Report on the Future" which proposes a long-term framework in which to judge its programme over its four-year term in office. The Committee for the Future examines the report and submits a response to the Parliament, which forms the basis for Parliament's scrutiny of the government over that term. The Committee can also make statements to other standing committees on request concerning future-related issues (especially long-term policy issues such as climate change, population, energy and information technology) and assesses technological developments and their consequences for society. The committee initiates 80% of its work, including seminars and research, enabling it to set its own agenda and take issues of concern to parliament.

Scotland's Futures Forum

Scotland's Futures Forum (SFF) was created in 2006 by the Scottish Parliament following a year of research. The main objectives are to widen participation, promote 'aspirational futures' by exploring and articulating peoples views on what the future should be like, to challenge policy and to increase the ability of MSPs and the wider Scottish community to consider future challenges and opportunities. It conducts long-term topic-focussed projects (an ageing society, alcohol and drugs and sustainable communities). It also hosts various activities for MSPs, civil servants and its 2000 strong membership to stimulate debate in the Scottish Parliament and acts as a repository for other futures work.

Governance arrangements were considered key and the SFF is set up as a company limited by guarantee to enable it to raise third party finance, ensure relevance and to maintain independence. It has a small staff overseen by a board of Directors who consist of high profile public figures from Parliament (including 2 MSPs), academia, the civil service and business. It takes secondments from research councils, universities and think tanks to keep it active and to promote knowledge transfer back into the policy sphere.

Other examples

The Hungarian parliament has successfully hosted the Commissioner for Future Generations since 2007 to examine environmental cases with a view to the needs of future generations. The US set up the Congressional Clearinghouse on the Future in 1976 to help members develop legislative initiatives to address emerging policy challenges, and the Commission for Future Generations was set up by the Israeli Knesset in 2001 to look at the impact of current legislation on future generations. However the latter two disbanded due to issues with structure and funding.

Implementing Futures

Futures work can help decision makers to think ahead, but a key criticism of some work is that the production of scenarios and other tools, can take precedence over implementation and action. Further, there is often no mechanism to link work back into the policy process. The Foresight HSC is currently conducting research into the use of futures techniques in developing policy. This will examine where in the policy cycle techniques add most value, and the limitations of the methods that the government currently uses. Finally, despite the proliferation of futures work there has not been evaluation that is both systematic and transparent (open). This has led some to call for more resources to be devoted to the open evaluation of futures work to assess whether objectives were met, how the exercise was managed and to define follow-up actions.

Many in the field suggest evaluation should focus on the contributions made to the achievement of outcomes, such as changes in the behaviour and activities of the people and organisations involved. Such approaches look at how futures work can be done better in particular circumstances. For example, research conducted by the National School of Government found that unless ministers and senior officials were engaged and supportive of the process, even high-quality futures work was unlikely to be implemented. While many government departments had produced scenarios of the future, many had been "tempered" before presentation to boards and ministers, so that the potential to build robust, evidence-based strategies was constrained.[10]

Overview

- Futures work can help decision makers to think ahead and plan strategically to shape long-term outcomes.
- Futures work is most effective when linked into the policy process, and sensitive to institutional structures and technical commitments.
- Local foresight exercises can identify solutions appropriate to the specifics of local circumstances.
- "Upstream" public engagement allows problem setting and open debate and can enhance existing national and local democratic processes.
- Many see a need for more attention and resources to be directed to more open evaluation of futures work.
- The Public Administration Select Committee has suggested that the UK Parliament consider some form of futures forum to increase its ability to engage with outside experts and the wider public.

Endnotes

1 *Governing the Future*, (2007) PASC.
2 For example see the *Road Map for National Security*, US Commission on National Security, (2001).
3 For example see the HSC Toolkit www.foresight.gov.uk/toolkit
4 *Mapping Foresight,* (2009), EFMN, MIOIR http://prest.mbs.ac.uk/mapping-foresight/2009.pdf
5 *Guidelines on Scientific Analysis in Policy Making*, (2005), BERR
6 *Working Report No.34*, (2006) Danish EPA.
7 *Science and Innovation Framework 2004-2014*, (2004) HMSO.
8 *Evaluation of the Foresight Programme*, (2006), PREST.
9 *EUROPTA*, (2000), Danish Board of Technology.
10 *Strategy - What Place in Government?* Summary (2008), NSG. www.nationalschool.gov.uk/strategyexchange

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