

Creating and Sustaining Social Foresight in Australia: A Review of Government Foresight

Australian Foresight Institute

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OF TECHNOLOGY

The near-future context is dynamic and unstable. It cannot be left to 'take care of itself'. It requires the careful and sustained exercise of human judgement and the application of skills and capacities on a scale that has never been needed before. More than anything else it requires the development and application of social foresight, for only with foresight can we create the lead-time to deal in depth with the emerging challenges of an imperilled world.

Richard Slaughter, 2002

Foresight is a convenient and evocative label for a very real trend in prospective studies as applied to strategy and policy planning. Its rise to prominence is driven by real needs and the failings of more traditional approaches. It refers more to an approach or philosophy of doing things rather than to specific techniques. One of the most important sets of practices Foresight comprises emphasizes interactive and participative methods of analysis and decision support. Whether or not the label persists or disappears in time is independent of the changes the trend is bringing about in the ways in which strategic futures work is carried out. Ultimately, foresight, strategic futures, or whatever we wish to call it, is a means to an end. What is important is that those involved in making and shaping strategy and policy at whatever territorial level of governance have the best possible information and means of anticipating future threats and opportunities available to them. The foresight trend, if anything, can help to embed in both decision makers and wider society and educational systems the inclination and means to consider the future as carefully as the past and the present.

IPTS Report Regional Foresight, Future-Proofing and Validating Development Strategies
Institute for Prospective Technological Studies, Joint Research Centre, European Commission
Directorate General

<http://www.jrc.es/home/report/english/articles/vol59/EDI1E596.htm>

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Creating and Sustaining Social Foresight in Australia: A Review of Government Foresight

Background

This research forms part of a four stage research project funded by the Pratt Foundation and undertaken by the Australian Foresight Institute at Swinburne University of Technology on creating and sustaining social foresight in Australia. The aims of the overall project are to:

- gain a clearer understanding of how foresight is already used in everyday life,
- research, demonstrate and further develop the capacity of futures concepts of ideas to support the development of a 'futures literacy' and an advanced futures discourse in Australia,
- map and evaluate the present use of futures/foresight methodologies internationally in order to identify those most appropriate for use in Australia,
- undertake a number of case studies on Institutions of Foresight and national foresight projects around the world to identify examples of best practice,
- develop criteria for identifying social foresight and assessing progress towards it,
- to recommend further steps needed to sustain continuing high quality foresight work in the public interest.

The specific aims of this fourth stage are to:

- undertake case studies of successful and unsuccessful foresight work,
- to develop accounts of the principles and practices of successful foresight organisations, and
- develop design options for the development of a national foresight capacity, including:
 - how such a capacity should work,
 - where it should be situated,
 - who should be responsible for running it,
 - to whom it should report,
 - political status, and
 - nature of initial financial support.

This fourth stage involves two steps – first, the evaluation of foresight work, methodologies and practice in Australia, and second, the evaluation of government foresight projects. A meta-scan of foresight practice in Australia has been undertaken by Ramos¹ and his work informs this stage, which reviews and evaluates government foresight.

The original aim of this stage was to provide a number of design options to inform the development of a national foresight strategy, but it became clear during the research that the good practice lessons emerging internationally, and the work done by Ramos on foresight practice in Australia, identify clear principles and practices of successful foresight. Potential designs and associated characteristics are therefore presented as a series of good practice statements which would need to be addressed in the development of any national foresight strategy for Australia.

Terminology

The reports and websites accessed for this report used a range of terminology to describe foresight work in government. In the extracts and quotations, these terms have been retained, some of which include: strategic foresight, futures research, futures work. All terms, however, relate to the use by government of futures approaches and processes to build a strategic thinking capacity to inform consideration of long term policy options.

In general, the term 'foresight' has been used to refer to the broad approach to considering the future in policy development, while the term 'futures' has been used to describe particular approaches, tools and methods used in a foresight project.

Why Social Foresight?

Introduction

Richard agreed to write (or maybe use some of his words with his agreement)

The Emergence of Social Foresight

Slaughter² has developed a framework for the development of a social foresight capacity, for the move from a past-driven to a futures responsive culture. This five stage framework recognises that the development of a social foresight capacity will not occur in the near future, but can be built up over a period of time. The five stages in the development of a social foresight capability is shown in Table 1.

Table 1: Stages in the Development of Social Foresight

Levels		Indicators
Level 5		<i>Social capacity for foresight as an emergent property</i> Long term thinking becomes a social norm
Level 4		<i>Futures concepts and ideas enable a futures discourse to develop</i> Foresight routinely applied in most organisations
Level 3		<i>Futures tools and methodologies increase analytical power</i> Widespread use of standard foresight tools and methods
Level 2	Futures processes, projects and structures embodied in a variety of <i>applications</i>	Futures concepts and ideas become influential via discourse
Level 1	Raw <i>capacities and perceptions</i> of the human brain-mind system	Unreflective use of forward thinking in daily life of individuals

Ramos' metascan of foresight practice in Australia³ indicates that there is already a significant foresight capacity in Australia, but it is dispersed across universities, institutions, non-profit organisations, business and government. The range of work undertaken by practitioners is varied in terms of its approach, focus and methodologies.

A social foresight capacity will emerge as more organisations begin to use foresight in their strategic thinking and in the development of their strategy. The routine use of foresight in organisations would mean that considered and systematic thinking about the future, integrated with knowledge of the past and present, underpinned strategy development at the organisational level. Organisations already using foresight include those in business, government and the non-profit sector, and range in size from small enterprises to large corporations and government departments.⁴

The diversity of organisations, practitioners and approaches means that, for foresight to emerge as a social capacity, some degree of coordination and thinking around how to harness foresight for the future good of Australia is needed. It is at the federal government level that such coordination should occur, since a national perspective allows the integration of a variety of work and the synthesis of outcomes to inform thinking and policy making about Australia's future. A national coordination function also facilitates the development of international links and networks with other countries which are already developing a foresight capacity in government.

Slaughter⁵ decries the inability of business, education and government to use available futures concepts to develop a coherent forward view and a wider view of the 'big picture'. Of government, he writes:

I can well understand that those involved in government at any level – local, state or national – will spend much of their time feeling overwhelmed by the demands of the present. But the upshot is that the prevailing short-termism of the culture is reinforced by some of the very people who could sponsor a shift of perspective. To be sure there are occasional spasms of futures interest: a commission here, a planning workshop there, a snapshot of the future in this field, a study group of that. But all this is piecemeal. It does not cohere. There is no attempt at disciplined 'big picture' thinking...

Slaughter suggests the development of a social foresight capacity rests on the ability of government to identify foresight functions that are currently missing, such as: environmental scanning, critical trend/event analysis functions, scenario building functions and early warning functions. The routine use of these functions increases the ability of government to develop a coherent view of Australia's future. At the national level, the aim should be to develop a long-term view beyond the boundaries currently set by electoral terms and changing governments. At the state level, the focus should be on developing a range of futures projects, taking as its guide, the work being undertaken in state government foresight in the USA.⁶ At the local government level, the aim should be to engage communities in processes of consultation, dialogue, reflection and visioning that assists them to determine their own futures.⁷

Slaughter identifies three key players in the development of a social foresight capacity for Australia – government, business and education. This monograph explores how government might play a part in establishing social foresight through the development of a national foresight strategy, particularly since government is well placed to both develop and coordinate foresight work across the country.

Approach

A broad overview of government foresight projects was undertaken as the first step. Information about projects and activities was sourced from personal knowledge, other practitioners, and web searches of government websites. Information was gathered about the focus and approach of government foresight work, methods used and outcomes, both intended and unexpected. During the research, a number of resources which either benchmarked or evaluated government foresight or which consolidated information about projects were identified, and these were included in the research. Work to develop a number of case studies of apparently successful national foresight programs was then undertaken. The underpinning aim was to identify any common principles and practices in the approach, operation and structures of government foresight projects in order to identify good practice for use in Australia.

Analytical Framework

Recent work undertaken in the Australian Foresight Institute at Swinburne University of Technology has contributed to the development of *integral futures*, where a holistic view of the full range of futures approaches, perspectives, philosophies, tools and methods is sought. As Slaughter⁸ writes ‘A key aspect of the integral approach is to honour all truths and acknowledge the value of many different ways of knowing across all significant fields’. The work of Ken Wilber is one theoretical underpinning of integral futures.⁹

A basic concept in Wilber’s work is the four quadrant model of development with which to view human activity and indeed, human existence and consciousness. The model is depicted in outline in Figure 1.

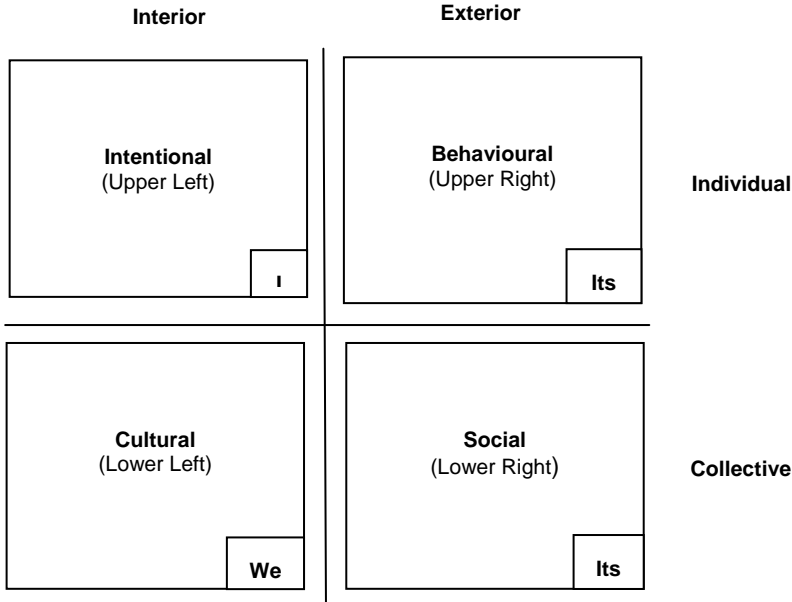


Figure 1: Wilber’s Four Quadrant Model

Within each quadrant, there are development lines and streams (eg cognition, moral, interpersonal etc) which emerge in waves, levels and stages in different ways and at different times depending on the particular situation. States of consciousness and types of ways of knowing are also fundamental to Wilber's theory. An integral approach tries to find ways to understand issues and problems that recognise and integrate all these factors, across all quadrants.

This monograph is not the place to explore the value or otherwise of Wilber's work and the emergence of integral futures. Wilber's model, however, provides a more holistic way to define and explore the essential characteristics of government foresight. As Wilber has said:

But now global systems and integral meshworks are evolving out of corporate states and value communities. These interdependent systems require governance capable of integrating (not dominating) nations and communities over the entire spiral of interior and exterior development. What the world needs now is the first genuinely second-tier form of political philosophy and governance ... an integral system of governance that will call us to our more encompassing future.¹⁰

The value of Wilber's model is that it identifies areas of activity and processes not previously considered in the significant amount of work already undertaken to draw together lessons from government foresight work. Those lessons have focused primarily on elements such as process, structure, involvement of stakeholders and linking foresight more closely with research and development and innovation. Together with analysis of project outcomes, primarily around future developments in science and technology and potential impacts on society, there is already a strong knowledge base to inform the development and implementation of government foresight work in Australia.

What seems to have been missed in the work undertaken to date, however, is analysis of how people involved in government foresight have experienced their participation and how they changed, if at all, through their involvement. That is, whether, and how, the foresight capacity of individuals has become explicit and conscious, or has changed in depth as a result of their involvement in government foresight work. Similarly, since it is people who run projects, participate in them, convince policy makers of the value of outcomes and ultimately, implement policy decisions, it makes sense to ensure that consideration of the actors in foresight work is part of the design of that work. The use of an integral, four quadrant framework allows this individual perspective – the inner world of thoughts, motivations, values, feelings and emotion - to be incorporated as a critical element to be considered in the development of a national foresight strategy.

Figure 2 shows how Wilber's four quadrant model can be applied to an analysis of government foresight, and this model has been used as the analytical framework for this research. Such an integral approach allows a richer analysis of government foresight work to be undertaken and moves beyond the current focus on Lower Right Quadrant activity around science and technology developments, and Upper Right Quadrant activity, around how projects are managed. Using Wilber's framework, four domains are identified which need to be taken into account in the design of a national foresight strategy:

Upper Left: Staff and Stakeholders

Lower Left: Project Contexts

Upper Right: Project Management, Execution and Review

Lower Right: Information and Knowledge

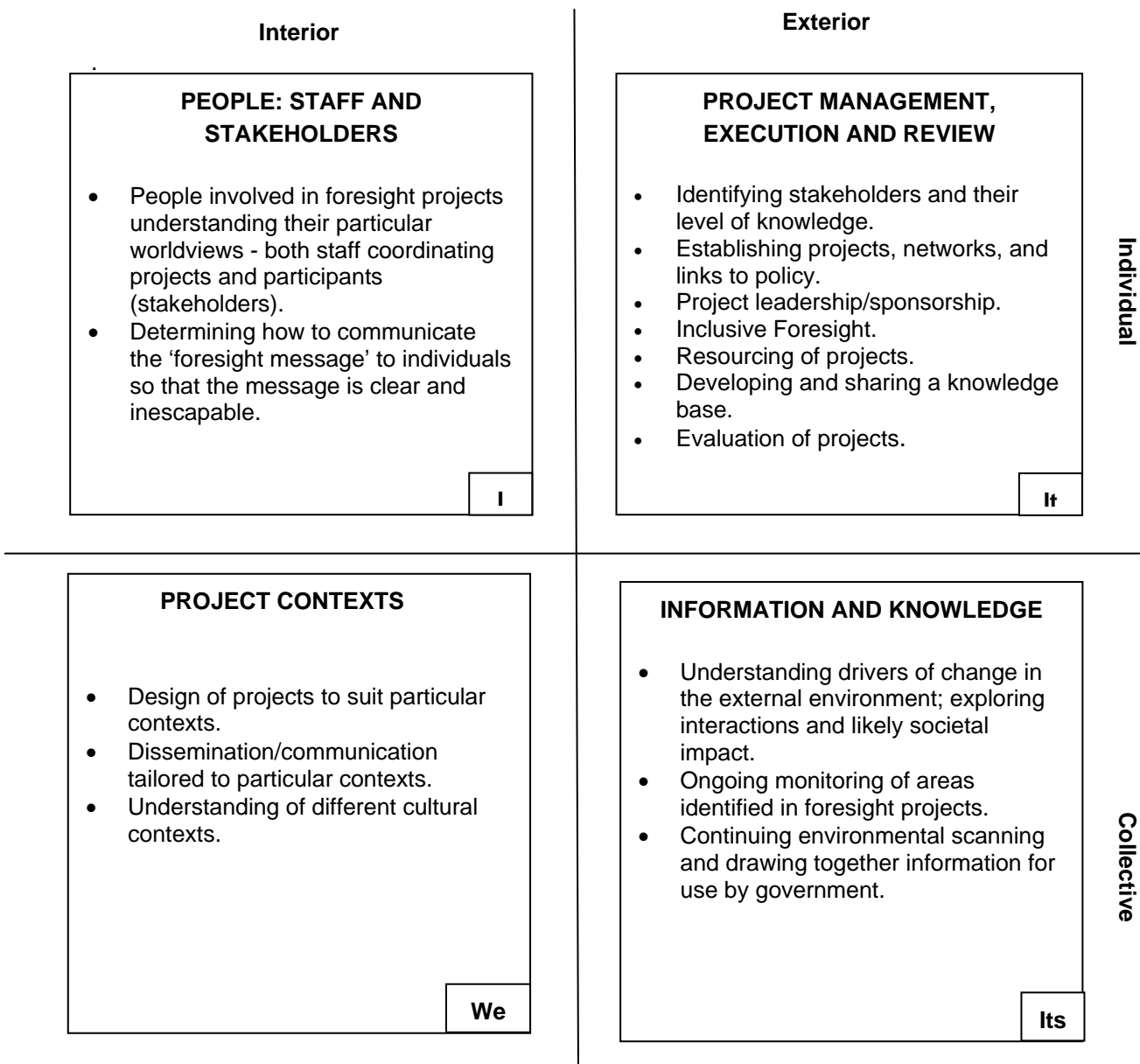


Figure 2: An Integral Analysis Framework for Government Foresight

Types of Futures Work

It was clear early in the research that most government foresight work has been focused around issues to do with understanding future science and technology developments, particularly in the context of research and development and innovation, and using knowledge generated to inform government policy. In other words, most – but not all - government foresight has been focused around pragmatic issues. Most used similar methods (predominantly Delphi and scenarios). Particularly in Europe, foresight appears to be emerging as a government capacity, but less so elsewhere, where projects have often been ad hoc and/or short-lived. There is evidence that there is a shift in emphasis towards more social issues, but the history of government foresight is chiefly about the future of science and technology rather than the future of society.

The emergence of a social foresight capacity cannot occur only through the action of government, but government is in a unique position to coordinate, promote and generate foresight practice, and synthesise outcomes for the good of the society. This research therefore focused on lessons learned from government foresight projects, rather than on an interpretation of the content and focus of those projects, or an analysis of those projects from a futures perspective.

It is worth exploring at this point, however, Slaughter's classification of the types of foresight work into pragmatic, progressive and civilisation categories. Slaughter's¹¹ description of each type is provided in Table 1.

Briefly, pragmatic foresight, is about an organisation better understanding its industry and its place within it, with a focus on competition and finding new markets. Progressive foresight is about transforming the industry and re-writing the rules of the game, while civilisational foresight takes a global view and is about transforming society by re-conceptualising human activity. As Slaughter suggests,¹² the categories are not independent of each other, but do provide a useful way for practitioners to determine the appropriate balance between the three types in their own work and practice.

Table 1: Types of Foresight Work

Pragmatic Foresight

...is really about carrying out today's business better and, indeed, there are only a number of fairly straightforward means by which foresight can be used to improve and extend current practice in a wide range of organisations. The fact that it is paradigmatically naïve does not reduce its usefulness in a taken-for-granted way. Most organisations can benefit from some use of pragmatic foresight and there are many consultants and consulting organisations that can supply it.

Progressive Foresight

...contains some sort of explicit commitment to systemic improvement. Foresight in this mode can readily be linked with genuine attempts to reform business and organisational practices in the light of wider social and environmental concerns. There is a strong link with what has been called Triple Bottom Line accounting, Factor 4, Factor 10, and many other such innovations. This work is about going beyond conventional thinking and practices to reinventing processes, products and services using quite different assumptions.

Civilisational Foresight

...takes yet another leap into the future. This seeks to understand the possible characteristics of the next level of civilisation – that which lies beyond the current impasse, the prevailing hegemony of techno/industrial/capitalist interests. Civilisational foresight is perhaps the most fascinating and demanding domain of futures enquiry. It seeks to clarify just what might be involved in long term shifts towards a more balanced and sustainable world. By definition it draws on countless fields of culture and enquiry and employs notions of 'design forward'. Such work allows us to speculate openly about such questions as worldview design, underlying assumptions, civilisational myths and so on, as well as more down-to-earth matters such as infrastructure, governance and economic relations.

Whether or not the development of a social foresight capacity involves progression through these different types of foresight work, and might therefore represent stages through which individuals, organisations, governments and practitioners must 'pass', is unclear. While civilisational foresight might be the level to which all foresight work and all practitioners should ultimately aspire, it might not be the most realistic starting point for the development of a social foresight capacity.

Ramos points out that there is a seeming discrepancy between the quality of futures work already being undertaken in Australia, and the degree to which this work is known about and accepted in the wider society. As Ramos suggests, this may have something to do with how foresight is communicated to the broader society, but an explanation is also grounded in understanding better how foresight emerges in individuals. Ramos' scan indicates that "approaches to futures work that focused on the foresight of the individual were found to be almost totally lacking ... attempts to mass produce foresight in organisations may be less appropriate than futures work that aims to improve an individual's foresight, through development and expansion of consciousness and/or new skills and behaviours".¹³

A foresight capacity is not a 'thing' that can be developed. It is a human thinking capacity which everyone has, but which individuals need to be 'exposed' to in order to recognise their own innate foresight capacity. A foresight capacity emerges as individuals begin to understand foresight and apply that understanding to their personal and professional lives, and to their interactions with the societies and communities in which they live and work.

The development of a social capacity for foresight in general, and government foresight in particular, therefore surely has its origins in the processes that allow individuals to understand foresight, and to begin to use foresight in their work and in their daily lives. The ability of futurists and practitioners to be able to communicate their messages in ways that people can see the immediate relevance of foresight in their everyday lives, and to enable them to understand why the movement from individual to social foresight is essential, is therefore probably the first step in the development of a social foresight capacity. After all, it is people who ultimately implement foresight, whether at the individual, organisational or social level. Whether exposure to foresight occurs as part of an organisational process, as part of an academic program, or as the result of individual action, is not critical. What is important is that the 'message' about foresight is so clear and inescapable that, once exposed to it, an individual's thinking processes are receptive to further immersion in the futures discourse.

Unless an individual's capacity for foresight is surfaced and developed through participation in futures processes, and unless there are ways for people to communicate and learn from each other to develop a 'critical mass' in society, it is unlikely the widespread use of futures approaches and the subsequent development of a social foresight capacity at the civilisational level will, or can, emerge in the near future. So, while civilisational foresight may be the most 'fascinating and demanding' domain of futures enquiry, it is unlikely to be the orientation that will enable individuals to quickly understand the necessity and value of foresight in our world today, and then to begin to use foresight approaches and methods in their lives.

It is fair to say that understanding issues to do with civilisational foresight requires a sophisticated level of understanding of futures concepts, methods and a deep immersion over time in the futures discourse. It is probably more realistic to expect that people whose day-to-day focus is about doing what they do better, both personally and professionally, to focus their foresight projects initially in the pragmatic arena and then, as their knowledge and understanding grows, to see the overlaps and progressively move their work and actions to link with progressive and civilisational foresight. In the same way, organisations – which are, after all, made up of human actors – can be expected to first use foresight routinely to inform their strategy development – a pragmatic focus – and over time, might be expected to move to projects and action dealing with progressive and civilisational issues. The current focus on Triple Bottom Line reporting can be viewed as an example of a shift from a focus on the pragmatic to the progressive arena.

Slaughter's stages of foresight development (Table 1) can be applied at a number of levels – individual, organisation, government and society. An individual may 'discover' foresight and seek more information, either informally or by enrolling in an academic program. An enlightened organisation may decide to use foresight approaches, which facilitates the understanding of foresight by individuals within that organisation. Individuals working as consultants have differing foci, depending on their own stage of foresight understanding and work with organisations and groups. All types of activity are probably necessary precursors to the emergence of a social foresight capacity. What, then, is a government's role in promoting and generating social foresight?

Government is one of the three central players in the development of social foresight. Government's role in building social foresight might consist of four core elements:

- the use of futures approaches within government to build a government foresight capacity to inform its policy development,
- the development of a coherent and permanent structure to support the range of foresight work that already exists, to ensure systematic application of outcomes throughout Australia for the optimum benefit of the country,
- the identification, coordination, linking and support of individuals and groups using futures approaches in Australia, to facilitate sharing of knowledge and good practice, and the use of futures approaches in strategy and policy development more generally, and
- the building of international networks and relationships to contribute to the emergence of social foresight as a global capacity.

This monograph suggests a framework for a national foresight strategy for an Australian government that would be able to encompass the three types of foresight work in its own policy development and across a range of practitioners and projects. In this way, there would be opportunities for individuals who have never heard of foresight, but who are willing to find out more, to work together with those already deeply immersed in the field and to participate in thinking about the design of Australia's future.

An Overview of Government Foresight

Introduction

The use of futures approaches in government is not new. Governments around the world have been using a range of approaches since the mid 20th century. Most of this work has, however, been focused around science and technology foresight, rather than social foresight. Long-term societal well-being – that is, recognising responsibility for future generations – has not generally been a primary focus of government foresight projects to date.

But, as Blackman¹⁴ suggests, there is hope:

“After the wilderness years of the 1980s and much of the 1990s, governments are again showing serious and increasing interest in futures research and thinking. This extends far beyond the technology foresight programs which have been established in many countries in recent years (and of which I think it is fair to say those at the centre of government remain highly sceptical). Rather, there is a renewed desire at the heart of government to assess whether and how futures thinking and foresight can be of more help right across government departments: what machinery could be there at the centre of government that would help manage risk better ... Or seize opportunities ...”

Better understanding of exactly how futures thinking can be integrated into business decision-making and government decision-making processes. This means knowing not just the best way to use a particular methodology, for it depends critically on the context in which the exercise takes place.

This section provides an overview of government foresight projects, and research and evaluation studies on the efficacy of foresight in government, in order to establish some understanding of the scope and outcomes of past and present activity.

Government Foresight Projects and Programs

Appendix 1 summarises a desktop scan undertaken to identify past and current government foresight projects and programs. It does not pretend to be inclusive, particularly since information about government foresight is to be found in many and varied sources. It was often difficult to cross reference information about projects across sources in order to avoid duplication of entries in the scan. Projects identified in different sources sometimes appeared to be very similar, but had different titles or websites. Partial listings of government foresight work were found in many studies, but most were limited in scope. A notable exception was the German Futur site (<http://www.futur.de/en/index.htm>) which has an extensive database of foresight projects around the world. For the purposes of this research, it was considered to be more important to obtain a view of the range of government foresight work rather than attempt to identify and include every project or activity.

The scan therefore started again to build a representative, rather than comprehensive, listing of government foresight work. It provides a snapshot in 2004 of the clearly widespread use of futures approaches by governments across the world as a tool for developing input into policy decisions in the past and the present.

Some overview observations on the scan can be made:

- foresight projects in government have been underway for a long time; this is not a new methodology for government, but its popularity as a policy tool has been cyclical,
- early use of foresight appears to have been in specific government projects, led by particular departments, and focused around forecasting, with some projects continuing over a significant period of time,
- there has been increased emphasis in recent years on regional foresight, particularly in Europe and Latin America, led by governments or governmental agencies,
- early projects preferred Delphi methodology, with scenario planning becoming more common in the 1980s/1990s, with a related move to involve a wider range of stakeholders and panels in the process,
- there has been a shift away from the predictive, forecasting approaches used in early foresight projects to a more open, exploratory approach and a parallel desire for more methodological rigour in those approaches,
- a shift from a focus on ensuring prediction and tangible outcomes to one that places value on the process itself and more intangible outcomes such as networks, and
- the overwhelming focus has been on science and technology foresight, with a shift to integrate a more social focus in recent years.

A number of phases in foresight work can be identified. A rationalist, more technical and quantitative approach characterised the 1960s, with a focus on technology forecasting and short term projects using technical experts. A second generation in the 1980s saw recognition of chaos and unpredictability and had a broader focus that included markets, integration with commercial feasibility issues and used a wider range of experts, including academe and industry. A third generation in the 1990s was characterised by a view of futures work as a way to generate commitment and engage stakeholders and included more emphasis on social aspects.¹⁵ Generally, however, decisions to use foresight appear to have been based on short-term imperatives rather than because government recognised the need to develop a social foresight capacity to underpin its policy making processes, or because government recognised its commitment to ensuring a sustainable future for future generations. Foresight appears rather to have been viewed as a tool that would facilitate improved understanding of future development in science and technology and to allow governments to focus spending on identified priority areas:

The contribution of foresight is twofold: it provides difficult-to-acquire strategic information for decision-making, and it functions as a socio-economic mobilisation tool to raise awareness and to create consensus around promising ways to exploit the opportunities and diminish the risks associated with new science and technology developments.¹⁶

The inherent value of studying the future in a more systematic way to improve the quality of the strategic thinking¹⁷ which informs policy development does not appear to have been an *overt* factor in the use of futures approaches by government.

Benchmarking Government Foresight

The UK Government Strategic Futures Unit commissioned a benchmarking exercise with 52 organisations in 2001, published as *Benchmarking UK Strategic Futures Work*. While the organisations benchmarked included more than government departments, its findings provide a snapshot of foresight work at the national level, and have been summarised in Table 2.

Overall, national foresight work at the time the benchmarking project was undertaken suggests an approach that is viewed as valuable by those involved, but which is limited in its value and usefulness in policy terms by short-term pressures and by unclear links with the policy process. The authors note that:

The influence of historical and cultural factors remain strong. Thus, the moments of change out of which different strategic futures organisations were born influence the approach taken today, as do national and cultural traditions within strategic futures work. With the exception of the scenario planning technique, there is little consensus or consistency in the methods employed. This complexity creates the potential for the unwitting practitioner to embark on a strategic futures exercise that yields little of value to policy making.¹⁸

The authors of the UK study did, however, also identify a number of commonalities across the organisations benchmarked that “if taken into account, should enhance the value of strategic futures work”.¹⁹

An earlier benchmarking exercise undertaken by Martin and Irvine²⁰ on what they termed research foresight had come to similar conclusions:

...the high degree of intrinsic uncertainty involved means that there are no short-cuts to success, nor any simple routes to avoiding failure ... foresight is a complex social and technical process, and the emphases which need to be placed on different elements and tasks in any exercise vary considerably according to the goals, field of study and numerous other factors. This said, it is still possible to identify a set of common criteria and guidelines to be taken into account when designing an executing research foresight.²¹

Recognition of the complexity of foresight work would therefore seem to be one of the preliminary steps in the design of any project. This complexity is deepened by having to deal with increasing ambiguity and uncertainty generally, the more intricate interrelationships between drivers of change, and the need to involve a broader range of stakeholders with the concomitant increase in work required to manage participation processes.

Martin and Irvine also identify a number of tensions inherent in foresight work which are summarised in Table 3. The tensions identified relate primarily to project management and execution and the quality of available information. Only one tension – identified as the ‘limited ability of individuals to think about many factors simultaneously’ - refers to an Upper Left Quadrant capacity. Its impact, however, is not viewed in terms of improving the thinking capacity of those involved in foresight work but instead is viewed in terms of the quality of project outputs and the communication methods used once the project was completed. Both are critical elements in the success of foresight work, but so too is the degree to which individuals are able to develop an understanding of futures concepts and approaches and then interact with, and participate in, a foresight process.

Table 2: Summary of Findings from Benchmarking UK Futures Work

Objectives and Remit

- Futures work tends to emerge from moments of social or political crisis – that is, new challenges in the external environment generate a new for new policy instruments and processes.
- A model to categorise the objectives of futures work has developed: illuminate issues, influence policy, formulate policy, implement policy, with different skills, competencies and structures needed for each stage.
- Most projects work at 5-20 years out; with a few having longer time frames (eg Norway to 2030).

Scale and Scope

- Most programs have been in existence from 1 to 85 years; about 50% have been in operation for more than 20 years.
- The commitment to continuing futures work is stronger in government than in commercial organisations, where project based work is the norm, often to support business planning, or to answer a specific research question.
- The optimal approach may be to combine a team with continuing responsibility for futures work with project based assignments focusing on specific aspects of policy.
- Futures work is often carried out by strategy and marketing departments, rather than distinct strategic futures units; generally not a distinct function, but part of strategy development.
- Little sustained and focused futures work/analysis; limited by short-term financial pressures & limited tenure of staff; often undertaken at middle management level, thereby diminishing importance in organisation.
- But...there is a dedicated core of staff, particularly in government, sometimes only one or two people.
- Small external network contributing to different projects.
- Senior staff are involved in futures processes; their participation is essential for 'buy-in'.
- Experience and calibre of people involved in futures work varies widely.

Methods and Approaches

- Social science influence.
- Linear models in post-war environment and in economic planning in 1960s.
- Shift in late 1960s to non-linear, relative and post-modern approaches. Four themes: rise of narrative, impact of experiential learning models, chaos theory, and complexity theory.
- Rise of scenario planning; more inclusive and potentially influential in organisations.
- Change occurring at same time as conventional models remain strong (eg audit).
- Breadth of analysis and level of complexity of approaches can be differentiated.
- Analytical/creative tension – divergence between those who prefer one approach.

Impact on Policy

- Linked to organisation's remit.
- Influence achieved by tangible output, or by individual members being seconded to committees, or from holding expert positions.
- Evaluation of impact in government requires detailed assessment of unit and the various ways in which it integrates with policy makers.
- Little monitoring of the impact of futures work.
- Work needs to include consideration of intended and unintended outcomes.

Table 3: Tensions In Foresight Work
(adapted from Martin & Irvine, 1989)

Tensions			Comment
insatiable demand of policy-makers for information	VS	costs of acquisition	it takes time and resources to obtain, analyse, understand and present new data
pressure for action	VS	uncertainty of outcomes	although policy decisions can be deferred, eventually choices have to be made
rapid change and increasing complexity	VS	limited capacity of individuals to think about many factors simultaneously	resulting in a tendency to over-simplify not only when constructing alternative views of the future, but also when communicating the results of foresight work to and among people who were not involved
pressure for a prompt response or decision	VS	need to have complete information	which is why foresight should be ideally be undertaken on a continuing basis
preference of policy-makers for quantitative data (because of its presumed reliability, validity and public acceptability)	VS	utility of complementary qualitative information and subjective evaluation	foresight integrates both types of data
need for efficiency		advantages of flexibility	while policy research must be capable of responding rapidly to changing circumstances, which is best guaranteed by simultaneous exploration of alternative approaches by individuals and groups, such multiple approaches is not conducive to efficient implementation
attempts to render policy analyses objective and rational	VS	ideological and political factors	the risk of centralised analysis in a politically charged environment is that ideology and politics may too often swamp knowledge and objectivity (Coates)
short term factors (eg budgets and electoral pressures)	VS	longer term concerns often more important to sustainability of society and environment	
pressure for certainty	VS	contingent and hypothetical	good policy analysis needs to deal with 'what if' questions and must continually look for 'let us suppose' information and data – all of which are at odds with inherent bureaucratic rigidities, the increasing trend to functional specialisation and ideological preconceptions.

In more recent work,²² a number of impediments to foresight work have been identified. These have been summarised in Table 4, using the four quadrant model as an organising tool.

Table 4: Impediments to Foresight Work

People: Staff and Stakeholders	The best talent has never worked on broad, long term issues.
	Policy officials lack the knowledge and experience to properly execute a foresight process.
	Lack of decision skills; decision makers do not understand the complexities of the issues about which they must decide.
	Lack of understanding of the magnitude and complexity of the problems; lack of models showing complexity interdependence of events and policies; lack of understanding of consequences of actions; stereotypical thinking.
	Moral impediments: insufficient attention to the needs of future generations, caring about the wellbeing of only one's group or nation, corruption of political leaders, waste, greed and self-centredness, economic inequities, lack of a holistic view of the world, fragmentation among many people, lack of respect for the environment, lack of compassion and tolerance for others. ²³
Project Contexts	None identified.
Project Management and Execution	The government is not interested in the long-term future and/or the public is not interested in the long-term future.
	No top-level support for foresight.
	Lack of funding for projects.
	Political aspects: foresight work not aligned with interests of current government, or has been proposed by an opponent. Lack of consensus – differing interests and ideology among key actors, politicians, public and particularly lobby groups.
	Lack of clear cut strategy and goals, lack of coordinated actions among actors.
	Poor communication of rationale, process and outcomes.
	Bureaucratic rigidity, compartmentalisation and specialisation frustrates attempts to promote cooperation among departments and to take a broad long-term view.
	No one has responsibility to act; lack of adequate coordination among responsible ministries and agencies.
	Time pressures restrict vision to the short-term. Near term issues gain more attention than those that have more distant future consequences.
Outcomes are incomprehensible or irrelevant to practical policy issues or both.	
Information and Knowledge	Lack of accurate, reliable and sufficient data and information, or the uncertainty of the risk, conflicting information, lack of coordinated scanning.

Mapping both the tensions and impediments using a four quadrant approach as shown in Figure 3 suggests the impediments are located mainly in the Upper Left and Upper Right quadrants – the individual interior and exterior areas. This highlights the need to pay attention to the people involved, their values and attitudes, the knowledge and thinking capacities they hold, the way in which people interact and the roles they play in foresight work. Recent evaluation work has begun to recognise these issues,²⁴ although the focus remains on how people affect the processes involved in foresight work (Upper Right), rather than on exploring the experiences, motivations and worldviews of the people themselves (Upper Left).

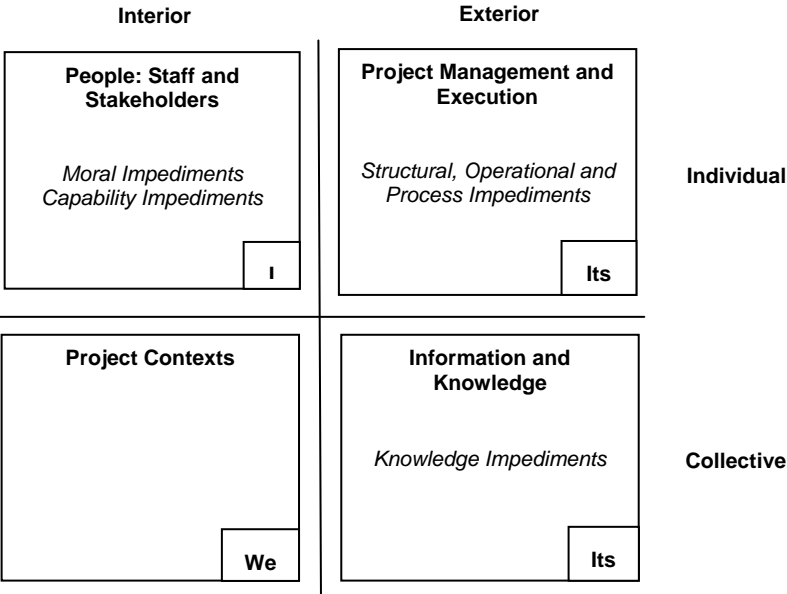


Figure 3: An Integral Overview of Tensions and Impediments in Foresight Work

The absence of tensions and impediments in the Project Context Quadrant is also notable. The need to tailor foresight work to the particular organisational and cultural context appears to be almost now taken for granted in the design of projects. As such, there do not appear to be any particular cultural or contextual impediments identified by writers and evaluators, since these are identified and dealt with early in projects where the surfacing of cultural and contextual issues is identified as a preliminary step. A desired future outcome here may then be to ensure that all identified tensions and impediments are dealt with in the same, routine manner in government foresight work.

There are now a considerable number of publications and reports dealing with government foresight in its national or regional forms. Some of these reports provide the same information in different forms, particularly in terms of case studies. Many publications provide detailed information, guidelines and steps involved in setting up foresight programs. For example, a publication from the European Commission Research Directorate General entitled *A Practical Guide to Regional Foresight*, offers clear and detailed advice about the establishment of foresight programs. The Guide includes a section on the rationale for using foresight, practical considerations, several case studies and an overview of methods. It represents a notable 'how to' guide for governments. There are also a number of substantial evaluation studies of government foresight projects.²⁵ Again in Europe, the work that has been undertaken is significant, as is the work from PREST, Policy Research in Engineering, Science and Technology (<http://www.mbs.ac.uk/research/centres-projects/engineering-policy/index.htm>) at the University of Manchester.

The European initiative to establish the Eurofore database of foresight competencies (<http://lesmman.acu.uk/eurofore/>), and the guide to regional foresight, represent important and needed analyses of lessons learned government foresight. More of this consolidation needs to occur, however, so that both interested individuals and those charged with designing and implementing projects have access to the wealth of knowledge that already exists. To achieve such a consolidation, and to maintain it over time, would represent a significant investment of time and resources and would require a macro-level approach across nations. It would ensure, however, that new practitioners entering the field of government foresight would be able to design their projects and work using good practice principles developed from many years of experience across the world.

An Analysis of Government Foresight

This section is a synthesis of the desktop scan and findings from the knowledge base on government foresight work using the four quadrant framework outlined in Figure 2 (page 13).

People: Staff and Stakeholders

Focus on people involved in foresight projects and understanding their particular worldviews - both staff coordinating projects and participants (stakeholders). Determining how to communicate the 'foresight message' to individuals so that the message is clear and inescapable.

Staff

Most, if not all, of the work already carried out on evaluating government foresight has focused on how the projects were structured and managed and the project outcomes. Apart from indicating that high level individual sponsors or foresight champions are needed and that staff need appropriate knowledge, there has been little detailed analysis on the people involved in the project, how they became involved, what their experiences of the projects have been, and how they, as individuals, have changed as a result of their involvement. Also unclear is the degree of foresight knowledge held by these individuals – that is, whether they came to government foresight as futures novices, or as futures aware. This latter point is probably critical: an existing member of staff, with good credibility, who understands both foresight and the policy process is likely to be able to exert influence on the decision about whether or not government foresight work is undertaken.

The need for government foresight staff – or practitioners – to understand their own worldviews and perceptual filters through which they interpret and interact with their worlds is an element that is also not obvious in current evaluation work. If one accepts the premise that the emergence of social foresight begins with individual foresight, then a preliminary step in a government foresight project has to be about ensuring that those people who will be involved – from government ministers to project staff - understand what foresight is, its value and its necessity. Understanding worldviews is also critical in Lower Right quadrant work where environmental scanning takes place, so that those doing the scanning understand both how they view the world and how to present scanning outcomes in ways that are useful to users.²⁶

The coordinators of the eFORESEE project (www.eforesee.info) for example, quickly became aware that people frequently did not understand what foresight was about. Part of their project plan was therefore an extensive preparation phase which included the formation of 'foresight awareness teams' which could respond to requests to 'tell us what foresight is about', and increase the understanding of basic concepts. On the other hand, definitions of successful foresight projects often do not rate the individual perspective as an important success factor:

The key to successful foresight involves an appreciation of holistic environment in which technology operates and consists of social, politic, economic, environmental, technological and competitive forces.²⁷

An integral perspective suggests that such success factors are Lower Right quadrant, focusing primarily on the external world. The integration of individual/interior perspectives into government foresight work might also contribute to the likelihood that projects would continue over time, since individuals committed to foresight are probably more likely to see the necessity of foresight and to want to find ways to continue working in the area.

It is important to note the difference between foresight as a thinking capacity and foresight as a tool. As discussed earlier, foresight is not a 'thing' or methodology that can be quantified and used. Foresight is a thinking capacity which involves an individual better understanding their own motivations and worldviews, recognising the need for a longer term and more big picture view in their approach to the world, and using that insight in their interactions in their individual and professional lives. That is, an individual's recognition and understanding of their innate capacity for foresight is a precursor to being able to use and share futures approaches, tools and methodologies.

The view that foresight is a tool that can be 'used' may go some way towards understanding the findings of some evaluation work which identified that staff involved did not know how to run foresight projects.²⁸ If the understanding of foresight as a thinking capacity was not recognised and staff simply viewed foresight as another tool to use to inform policy development, it is probably not surprising that there were issues about the degree of knowledge held by staff.

What the evaluation work also identified was that when the foresight work continued, subsequent attempts were often much better:

It should be evident ... that foresight is neither simple nor unproblematic ... success often only comes after a lengthy learning process involving costly trial and error.²⁹

There does not appear to have been any recognition that the improved success of projects over time had something to do with the improved understanding of foresight by the individuals involved in designing and running the projects.

Stakeholder Involvement

There is frequent mention of the strengthening of networks as one of the major benefits of government foresight work, but this is referred to more as a benefit for communication across national borders or among expert communities, rather than as an individual or government benefit. Current evaluation work also suggests that government foresight will need to have a broad range of stakeholders beyond the use of experts, although it is now being suggested that some assessment of potential contributions will need to be made by project managers to ensure high quality contributions.³⁰ As well as such an externally imposed assessment of value, stakeholder involvement could also involve stakeholders self-reflecting on their own worldviews and what they will bring to the project before their participation starts.

Work undertaken by the PREST at the University of Manchester on 'inclusive foresight'³¹ aims to develop a framework for wider inclusion of stakeholders beyond experts in projects. Inclusive foresight, the authors argue, means that the role of human behaviour in foresight projects needs to be better understood, and not ignored which can result in "diminishing the understanding of the outcome" of projects.³² They refer to the need to take behavioural issues into concern in the choice of, and interaction between, stakeholders, in the choice of methodology and in how the project is organised, but not in the choice of staff to manage a project.

A paper by Loveridge from PREST³³ suggested that since foresight is inherently subjective, attention needs to be paid to the individual behavioural patterns, substantive knowledge, capability to interpret that knowledge into the future, and imagination of those who are to be involved. Participants need to have the ability to speculate about the future of the knowledge they now hold when that knowledge becomes increasingly uncertain over time. While this work begins to explore how individuals deal with new concepts and information, it not so much about the inner consciousness of those participants but rather the external manifestations of their judgements which emerge during a foresight project. Much work remains to be done to understand better the influence of individuals on government foresight projects and their outcomes.

Project Contexts

Design of projects to suit particular contexts. Dissemination/communication tailored to particular contexts. Understanding different cultural contexts.

A consistent finding of evaluations is that government foresight projects have to be tailored to suit the context. This is not unique to government foresight, and is a basic principle underlying futures work, as outcomes have to be 'owned' by the people who will be implementing them. How a country or region's processes work, who needs to be involved, and who needs to take outcomes through the policy decision making process all rely on understanding a particular context.

The context defined in most government foresight is national or regional in focus and does not move beyond the boundaries of those cultures. While this is understandable in terms of achieving effective policy outcomes, it would be worthwhile exploring how an overview of the approaches and consideration of cultural contexts used by foresight projects in different countries can be developed. In this way, a merging of the experiences of both 'western' and 'eastern' societies with foresight might be developed, and the lessons learned taken into account in future projects.

Project Management and Execution

Identifying stakeholders and their level of knowledge. Establishing projects, networks and links to policy. Project leadership/sponsorship. Inclusive foresight. Resourcing of Projects. Developing and sharing a knowledge base. Evaluation of projects.

This quadrant, together with the Information and Knowledge quadrant, are at the core of current government foresight projects, and the areas in which most evaluation work has occurred. The need to gain top leadership support, involve stakeholders in a variety of ways, the way in which foresight units or projects should be structured, clarity around rationale and purpose, processes and methods to use in particular contexts, the need to clarify expected outcomes and the need to be aware of potential impediments to foresight work and resourcing government foresight work have all been covered in some depth in evaluation studies.³⁴

There is a strong knowledge base in this area for those starting out in government foresight, one example of which is the *Practical Guide to Regional Foresight*, which has been used extensively in Europe in the accession countries to organise and run foresight programs, including the cross-country eFORESEE project (www.eforesee.info). The guide is an example of the quality of information now available about how to structure and manage foresight projects. The need to contextualise those projects is fundamental to design of projects, and as Fuller and Larue³⁵ suggest, structures to coordinate foresight projects vary, and no one way is necessarily better.

Information and Knowledge

Understanding drivers of change in the external environment; exploring interactions and likely societal impact. Ongoing monitoring of areas identified in foresight projects. Continuing environmental scanning and drawing together information for use by government.

Every project undertaken has included significant environmental scanning activity to identify information and knowledge relating to the specific topics being investigated. Some work is now being undertaken to synthesise that work.³⁶ The UK Government Foresight project attempted to develop a shared knowledge pool as part of the second phase of its work as a way of bringing together people with both conflicting and complementary views of the future, and as a way to facilitate networking. For a number of reasons, however, relating primarily to internal government processes, this was not a successful initiative.³⁷ The Eurofore database (<http://les.man.ac.uk/eurofore/>), is a repository of foresight competencies across Europe. The need for a shared knowledge platform to provide access to cumulative work undertaken and 'know-how', has been recognised in Europe,³⁸ and this principle would seem to be a primary step in the design of any government foresight work. The need for government foresight practitioners to be able to network effectively and share information and knowledge then also becomes critical so that communication pathways across countries are feasible.

Acknowledgement that a formal knowledge base is needed to inform future government foresight work is therefore being recognised, but synthesis of findings across projects is not widespread. While it is understood that the particular cultural and social context needs to be taken into account in the design of projects, the same degree of 'uniqueness' is probably not necessary when it comes to the Lower Right quadrant activity related to better understanding the external world. Drivers of change into the future are not unique to a country or region, but can be viewed as trends that influence all parts of the world. It is the interpretation of these trends for a particular context that is unique, not the trends themselves. The establishment of a shared government foresight knowledge base that could be accessed by governments across the world would therefore go some way towards improving projects – particularly if often time consuming and costly environmental scanning work could be replaced by an analysis of the knowledge base to identify drivers relevant for the project being planned. This sort of approach would also alleviate or eliminate the knowledge tensions and impediments to the success of government foresight work.

The need for such a database is not new. Reporting on outcomes of work undertaken by a government agency in Australia, Tegart³⁹ indicated:

The study has highlighted the need for international cooperation to maintain access to the world knowledge base; traditional links have been to Europe and North America but there is clearly a need to build links to the emerging science bases of East and North Asia. There appears to be a remarkable complementarity between the science bases of the latter and Australia.

Some Observations

What is not mentioned in any evaluation studies and what is not immediately suggested by the four quadrant model is the need, in an ideal world, for government foresight to be apolitical. Recognition of the need to accept responsibility for future generations and the need for a long term view in policy development does not, and should not, depend on political affiliation. A possible path to apolitical government foresight might also rest in the emergence of individual foresight. As individuals recognise and accept the foresight imperative, discussions of foresight at a government level would be underpinned by a recognition that the future of a particular society, country or the world has to be considered collaboratively, free of the short-term imperatives currently imposed by political systems. While recognising that, in the current political environment, it would be very difficult to achieve, the first step in the design of any government foresight work should be an agreement that foresight work is apolitical.

A second observation relates to the term 'foresight'. Because foresight is an innate human capacity, initial reactions can typically be "I do this everyday myself" or "I have been doing this forever, but I never called it foresight". Fuller and Laure⁴⁰ suggest that there is both a lack of clarity around what foresight is when it is used to describe processes and methods used in policy or strategy development, and that there is probably also a lack of credibility about foresight as an approach. They suggest that "when the overall context is strategy and change, then notions of foresight become subsumed in all the other activities".⁴¹ The 'buy-in' factor is also critical, since unless the decision makers have outcomes that address a current need, nothing will be done with the outcomes of a foresight process. A combination of approaches is therefore needed – one where specific projects are conducted according to identified needs, supported by a continuing information and knowledge function to underpin those projects.

Martin and Irvine point out that "the need for authority, legitimacy and credibility are fundamental to success in foresight"⁴² which involves the use of high level officials who have policy influence, experts and opinion leaders who can take the outcomes to a wider community for endorsement, ensuring projects follow clear and accepted protocols, including techniques and methods that are rigorous, and ensuring careful validation of the data upon which outcomes are based. Such approaches will assist foresight results to be viewed as credible, especially when those results might challenge conventional wisdom and assumptions. Fuller and Larue highlight that there is a need for "a clear definition of foresight, with pointers for practice to allow benchmarking of the foresight process and to allow comparison of data for future work in this area and to guide the work of foresight units".⁴³ They suggest that using the term 'foresight' in any unit depends on the organisation itself, and "given that foresight 'does not sell', it seems prudent at the beginning to refrain from attaching labels to teams or units as long as their remit is clear".⁴⁴

It is the experience of one of the authors of this work that the imperative of the foresight message is not necessarily obvious to senior decision makers. Without first paying attention to the current thinking systems of key decision makers and influencers and tailoring the message accordingly, using the term 'foresight' can be counter-productive and actually generate resistance.⁴⁵ There is a real tension between overt use of the term in the hope that people will have enough goodwill to test the idea before rejecting it, and a more closed approach where the term is not initially used openly in formal documentation, presentations and workshops may be advantageous in the long term.

Such a suggestion to 'hide' foresight to make it more acceptable and to operate in what is essentially stealth mode may be seen by those in the futures community to be a 'cop-out'. It is, however, a recognition that there are, as yet, no agreed ways to communicate the foresight message to individuals who have never heard of it before, in ways that the imperative is recognised and understood. It is probably more important to find ways to use futures approaches in organisations so that their value can be accepted. In hindsight, using such a stealth approach may well be viewed as one of the factors that ensure the successful embedding of foresight into policy and strategy processes.

Government Foresight Case Studies

Introduction

Throughout the Western world, Institutes of Foresight (IOF) have been in existence for nearly 90 years. Many have been running for 20-40 years. The biggest emergence of IOFs however, was during the 1980s and 1990s.⁴⁶ While the futures field itself during this time was said to be declining in influence, the prominence of rapid technological development and geopolitical changes, among other influences, led to the establishment of many national foresight programs and IOFs. Australia was one of many countries to launch and soon retire an IOF, the Commission for the Future. These 'first generation IOFs,' as futurist Richard Slaughter calls them, were in many cases expensive lessons which left many participants disappointed and critical of futures studies as a whole.⁴⁷

Taking advantage of hindsight, some 'second generation' IOFs have since been established. The success of these programs demonstrates that to some degree, the lessons paid for have finally delivered returns, perhaps beyond however, those originally desired and thus anticipated.

This section therefore provides five case studies of second generation IOFs established internationally, and are mostly European in origin. In addition, the current Australia Public Service (APS) futures forum is reviewed, to highlight aspects of the current national foresight activities of the Australian Federal Government.

The purpose of the case studies is to highlight the nature of the establishment, structure, development, and operation of IOFs that have been acknowledged as successful. This in turn, is intended to inform the development of a national foresight strategy for Australia.

The language, structure and style of the case studies is underpinned by a new analysis framework. The framework was developed from a range of international benchmarking studies, best practice reports and interviews conducted with representatives from the IOFs being characterised. In addition to interviews using an appreciative enquiry method, the content of the case studies are informed by a literature search and public resources from the IOFs themselves.

Approach

Ramos' meta-scanning analysis of Australian foresight projects, programs and practitioners focused on the nature of the futures work being conducted throughout Australian organisations, public, private and community. This involved characterising the foresight processes according to the 'social interest' of the outcomes and outputs (pragmatic, progressive or civilisational), the 'methods' used (linear, systemic, critical or integral), the 'focal dimensions' of the subject matter addressed (psychological, cultural, behavioural, structural) and the type of 'capability development' involved for the clients and/or stakeholders (concepts, methods and tools, structures and processes, and/or social legitimation). In contrast to this analysis of the nature of the content of the foresight processes, these case studies are more concerned with characterising the 'actors' and 'factors' supporting the success of second generation IOFs.

Accordingly, the following broad framework has been compiled from several analysis frameworks and benchmarking studies conducted throughout the 1990s and augmented with insights from interviews conducted with representatives from the IOFs presented in these case studies.⁴⁸ The analysis framework centres on the different 'roles' played by various 'actors' in relationship to different 'factors' related to the success of second generation IOFs. The existence or identification of the range of actors presented does in itself convey some of the elements of success for the IOFs canvassed, but does not prescribe their necessity or nature. The form the different factors take in each IOF context varies according to cultural, political and numerous other influences. It is these differences in success that the analysis framework serves to highlight in application within a case study.

Case studies of IOFs commonly focus on surface elements or various subject matter features, rather than the structural relationships underpinning the foresight process. The approach of characterising the nature of the factors of an IOF in relationship to the 'significant' actors affords a deeper analysis of the practical realities of IOFs, both tangible and intangible.

Many of the roles may be played by the same organisation or individual, yet their function is worthy of unique analysis. The different roles are defined in relationship to a range of factors that the actor is, in relationship to the other actor roles identified, most influenced by, or able to exert most influence on. It is important to note that this framework is designed to relate to IOFs, rather than the more common foresight activity conducted within an established organisation, although it may still hold value within this context.

Actors	Role	Typical Organisations and/or Individuals	Factors
Champions	Discover, propose, continue to argue for, pilot, and keep on the agenda the need for foresight activities.	<ul style="list-style-type: none"> ■ Internal senior manager or, ■ ministerial advisor, or ■ informal network of strategists, policy specialists. 	<ul style="list-style-type: none"> ■ Interpretation of political and practical context. ■ Interpretation of previous foresight activities. ■ Formulation of key arguments for foresight activities. ■ Proposed form of foresight activity.
Commissioners	Request work, allocate core budget, and hold chief responsibility for foresight activity.	<ul style="list-style-type: none"> ■ Minister; or, ■ Government agency or department. 	<ul style="list-style-type: none"> ■ Process of establishing the foresight activity's: <ul style="list-style-type: none"> ▪ purpose, ▪ scope, ▪ objectives, and ▪ governmental level, nature and degree of independence. ■ Primary active context of interest and reception of communication of the foresight activity.

Actors	Role	Typical Organisations and/or Individuals	Factors
Sustainers	May participate in foresight activity process, and/or receive outcomes, and provide supplemental funding, in-kind-services and/or formal support (credibility).	<ul style="list-style-type: none"> ■ Various Government Ministers, departments and agencies. ■ Independent policy, academic, and research institutions or bodies. ■ Industry bodies, and private companies. 	<ul style="list-style-type: none"> ■ The generation within a sector, industry and/or organisation: <ul style="list-style-type: none"> ▪ credibility of activity, ▪ openness to involvement in process, and ▪ willingness to engage with outcomes of activity. ■ Provision of resources and/or participants to enable foresight process and participation.
Conveners	Overall responsibility for managing the foresight activity – from formal conception to evaluation.	<ul style="list-style-type: none"> ■ Formally established agency dedicated to the foresight activity. 	<ul style="list-style-type: none"> ■ Design and management of: <ul style="list-style-type: none"> ▪ organisational structure, ▪ operational plans, ▪ program subjects, components and schedule (this may involve proposals to convenors to set scope and objectives), and ▪ in-house monitoring and evaluation, commissioning of external assessment, and responses to subsequent recommendations. ■ Identification, sourcing and management of resources (financial, human, etc). ■ Identification of and principle liaison with actors involved. ■ Liaison with foresight experts locally and internationally. ■ Communication of outputs/outcomes.
Facilitators	Responsible for practical components of conducting the foresight activity.	<ul style="list-style-type: none"> ■ Foresight practitioners, and/or ■ Policy/strategy specialists. 	<ul style="list-style-type: none"> ■ Provision of the futures studies knowledge, project management and subject/context required skill sets. ■ Identification and implementation of foresight methods suited to the subject matter and activity's purposes. ■ Management of foresight process – including participants and the realisation of outputs.
Participants	Organisations and their representatives actively involved in the foresight process.	<ul style="list-style-type: none"> ■ Representatives from: <ul style="list-style-type: none"> ▪ various Government Ministers, departments and agencies, ▪ independent policy, academic, and research institutions or bodies, ▪ industry bodies, and private companies. 	<ul style="list-style-type: none"> ■ Participants in foresight process through components such as forums, panels, provision of reviews and/or critiques of research and process (including un-requested dissenters), and so on. ■ The flow of information about interests, various resources and general feedback from participating organisations. ■ The flow of information about the status, knowledge generated, process needs and findings of the foresight activity to participating organisations. ■ Secondary active context of interest and reception of communication of the foresight activity.

Actors	Role	Typical Organisations and/or Individuals	Factors
Audience	Receive outputs and/or are influenced by the outcomes of the foresight activity.	<ul style="list-style-type: none"> ■ Government departments, agencies and minister's offices. ■ Independent academic, research and policy bodies/institutions. ■ Industry sectors and constituent companies. ■ Broader public. ■ Media. ■ International parties. 	<ul style="list-style-type: none"> ■ The nature and relevance of outputs and outcomes for various audience contexts. ■ Accessibility of outputs and outcomes within relevant contexts. ■ Tertiary active context of interest and reception of communication of the foresight activity.
Translators	Communicate information about the foresight activity.	Primarily the facilitators and convenors of the foresight process, leading into secondary translators (eg media and participants).	<ul style="list-style-type: none"> ■ Ability of translators to convey an understanding of the foresight activity's process, subject matter and outputs/outcomes into relevant contexts for (primarily) the convenors, (secondly) the sustainers, stakeholders and participants, and (tertiary) to broader audiences.
Implementers	Action insights from the foresight activity.	Any party who actively draws on the foresight processes outputs and outcomes within their field of activity. Including all actors listed and especially various audiences.	<ul style="list-style-type: none"> ■ Internal to the foresight activity the Convenors and Facilitators may identify ways to leverage the outcomes and outputs from the foresight work to influence participants, stakeholders and broader audiences. ■ External to the foresight activity, various actors may use the foresight activity's outputs and outcomes within their context for various ends.
Assessors	Tasked to assess the operation, outputs and outcomes of the foresight activity.	May be internal assessment by or commissioned through the convenors, or more independent external assessment, often according to previously established norms such as accounting audits.	<ul style="list-style-type: none"> ■ The purpose, development, and presentation of formalised assessment criteria, program assessments and subsequent recommendations.

Figure 4: An Actor/Factor Analysis Framework for IOFs

Each of the following case studies are arranged into three sections – origins, operations and outcomes – and include:

- a brief description of the contextual interests acting on the IOF,
- some general references to the subject matter focuses of the IOFs in terms of the AFI's meta-scanning framework, and,
- descriptions of the nature of the actor and factor elements outlined in Figure 1 that have been recognised as contributing to, or hindering, the success of the IOF.

The analysis presented is intentionally brief, and kept where possible to a level of generalised features of success. Where the program has been running for a long period of time, however, more information is included. This is so the case studies are fair to the programs, and yet are easily accessible, and the reader may more readily make general comparisons.

UK Foresight Program

Origins

In the early 1990s it became evident in many quarters of the United Kingdom (UK) that their research and development (R&D) efforts supporting technology infrastructure and business use had fallen behind that of other countries.⁴⁹ Despite relatively large public investment in R&D areas through its research councils, many promising opportunities had been missed and the pervasive social consequences of new technologies were increasingly apparent.⁵⁰

Within this climate, the newly created Minister for Science established an Office of Science and Technology (OST). In OST's development, an internal champion for foresight enabled a foresight scoping study, a 'Blueprint for Foresight,' to be conducted.⁵¹ Drawing on both UK and German experts in science and technology foresight, the blueprint was central to the proposal for a 'technology foresight' program within the 1993 White Paper, 'Realising Our Potential: A Strategy for Science, Engineering and Technology.'⁵² Its status as the first technology white paper for several decades, combined with the rapidly changing technology policy context and the Government's desire to more carefully coordinate related R&D expenditure, were strong arguments in support of the foresight proposal.⁵³

In 1994 the UK's Chief Scientific Officer was tasked with commissioning a Technology Foresight program. The primary purposes of the program were progressive, in that its aims included 'cultural change' through fostering a national 'foresight culture,' and 'closer interaction between scientists, industry and government.' The program's purposes were also pragmatic, however, in seeking to identify science and technology development opportunities, and investigate how these various developments 'could address key future challenges for society.'⁵⁴

From the subject base of technology R&D, the scope of the program reached across most large sectors of the UK economy and involved investigating the ramifications within social and environmental as well as economic and policy dimensions. While the main focus domain was structural, some cultural and behavioural elements were necessarily included. During the initial public consultation component of the program, and in light of the broad scope, the technology part of the program's name was soon dropped.⁵⁵

Originally established within the Cabinet Office, the OST Foresight program was intended to be convened relatively independent of other government departments, and able to produce recommendations that were not required to be implemented. Any findings of the Foresight program were offered for consideration to government, industry and scientists, as both solid research and aspects which challenged the status quo assumptions.⁵⁶ The key objectives were seen in terms of process outcomes for participants, of learning, networking, stimulating dialogue concerning future directions and hopefully some coherence in R&D activities, and relevant innovation in general.⁵⁷ In practice, however, various Ministers requested that 'priorities be identified in time for inclusion' in other department's publications,⁵⁸ and numerous participants called on Ministers for formal responses to specific findings.⁵⁹

Contributing to this was the sustaining role (in terms of supplemental funding) played by, and high degree of participation of, relevant government department's senior staff, and in some cases Ministers.⁶⁰ This was actively sought by the conveners and the Foresight Directorate to ensure the program was kept relevant to Government, and able to achieve its cultural objectives.

The engaged interest from participants can be seen as a mark of success. It represents not only engagement with the foresight process by diverse actors, but also an increase in dialogue between the actors, focused on the important issues raised by the program.

Operations

The UK Foresight program has proceed through two distinct five year phases, and in 2002 entered a third. For the first round, a range of high calibre facilitators, with relevant policy or research backgrounds and project management skills, were employed to conduct an extensive Delphi study, and some sector based scenarios. The study was divided into 15 sector-based panels with expert participants from industry, government and academia, and overall involved consultation with some 10,000 people.⁶¹ The foresight methods knowledge came through the Foresight Directorate and investigation by the panels, occasionally involving external instruction from method experts, in order to arrive at a suitable application given the topics of focus.⁶²

The panels were tasked with producing a report with recommendations and future visions for national R&D considering 'likely social, economic and market trends in each sector over the next 10-20 years and the developments in science, engineering, technology and infrastructure required to best address future needs.'⁶³ Completed in late 1995, the next three years involved the widespread translation and discussion of the findings by the panels with diverse audiences.

The extended implementation phase of the foresight process saw the establishment of:

- regional foresight officers, tasked with convening their own local panels to discuss the findings and identify possible benefits;⁶⁴
- associate programs enabling organisations or groups to conduct relevant studies in parallel with the Foresight panels (unfunded by government, but formally recognised, with active informational support from the Foresight panels and Directorate);⁶⁵
- Young Foresight, a high school futures education program with a distinct enterprise development focus which is still continuing with a joint funding arrangement; and,
- in 1998 the Prime Minister's Strategy Unit established a strategic futures project. The project conducted research studies (notably benchmarking, best practice, and method overviews for foresight projects), organised regular 'strategic thinking seminars' involving experts discussing long range strategy implications, and facilitated a whole-of-government strategy network for 'integrating futures thinking in all strategy processes.'⁶⁶

The second phase saw the program moved to be housed within the Department of Trade and Industry (DTI).⁶⁷ While still relatively independent in management, it is more readily sustained through closer integration with key policy areas.⁶⁸ Continuing the wide spread participatory consultative nature, the second phase's components included 11 sector-based and three thematic panels, 65 special research task forces, over 160 seminars/workshops conducted for various audiences, and the publication of 103 papers and reports. The scope was expanded to 'examine the opportunities that arose from the interaction of innovations in science and technology with wider social and market trends,' with the panels asked to 'consider the implications of their findings for education, skills and training and sustainable development' over the next 20 years and beyond.⁶⁹

Only 500 active participants were involved for the whole process, with a convening and facilitating team of between 20 to 30 full time staff. The participant identification process used was the most 'rigorous and ambitious method...co-nomination,⁷⁰ and to abate fears of tighter control by DTI a more bottom-up approach 'involving both more branches of government and industrial associations' was used.⁷¹ The foresight methods used varied more in this round, without the use of the contested Delphi method (although it is still the most referenced Foresight report),⁷² and were chosen by the panels under guidance from their facilitators in relationship to the subjects of focus.

The current third phase is much smaller in scope, and is focused on a 'rolling series of projects.'⁷³ This structure has been designed to be shorter, more specific and flexible in order to respond more quickly to emerging issues, while building on rather than repeating the previous foresight processes.⁷⁴ Criteria for selecting the projects are used in continued consultation and negotiation within the established network of 'foresightful' individuals, to identify projects of a trans-disciplinary nature, that can attract significant sustainers, and secure participants willing to be highly involved and open to taking action in light of project findings.

Each project involves a core participation group, a network of expert advisors and stakeholders, and foresight methods input from the convenors. The process for each involves environmental scanning, trend analysis and from there either scenarios or another foresight method suited to the subject matter.⁷⁵ In addition, the support of the relevant government department is required, and is led at a senior level by either the Chief Scientific Officer, the Director General of the Research Councils, or the Director General of DTI's Innovation Group.⁷⁶

Outcomes

Each completed foresight processes has been formally assessed, and noted for their outcomes of significant influence, and outputs leading to numerous implementations of findings and recommendations.⁷⁷ The assessments, first internal, then external, focused more on learning than accountability, reflecting the nature of long term studies and the pervasive objectives of cultural change, and significantly shaped the development of the program.⁷⁸

The breadth and depth of participation and outputs has seen the rapid uptake of foresight through many audience sectors of the UK and established new senior high level networks. Contributing to this success is the full publication of all related materials via a central website, free of charge, and the active translation and promotion of the various reports within relevant audience contexts.

The program has stimulated numerous other foresight projects, in industry, academia and government, with many recommended R&D and business training programs being established and funded.⁷⁹ With assistance from the Foresight Directorate many panels have continued under new convenors, and the broader society has also become involved through, for example, independently created television series on futures scenarios on the BBC.⁸⁰

Foresight in the UK has become relatively well established. While refocusing the Foresight program into targeted projects has become appropriate, and may be seen as a scaling back in importance, the evolution can be seen to follow a beneficial pattern. The development of a foresight culture nationally, of an institutionalised and social foresight capacity, has grown with the programs iterations through the uptake of futures concepts, methodologies and tools, through to establishing foresight structures and processes, and gradually, achieving broad based social legitimisation.

Norway 2030

Origins

Long term planning in Norway has had a dedicated institution (Langtidsprogramt) since the 1950s.⁸¹ Criticisms about its work, however, have increased over past decades. They include observations about its primarily macro-economic basis, one-dimensionality focus on the most probable and more immediate future, a history of inaccurate linear forecasts, and an inability to propose real measures for affecting and accommodating significant societal changes.⁸² As criticisms mounted, increasing numbers of foresight activities have occurred. From the 1970s onwards, various regional planning bodies, private organisations, and industry associations have conducted foresight activities in Norway.⁸³ They have however, received little public attention, and varied greatly in methods and quality.⁸⁴ More recently a wide range of more successful foresight projects have been undertaken, or institutionalised, in private, academic, defence, and other government organisations. These projects have had a strong emphasis on technology, with cross-sector and regional (Scandinavian and European Union) participation.⁸⁵ Increasingly, there have been calls for a national level foresight program.⁸⁶

There have, however, been two nationally focused foresight projects in Norway. Although small scale, these predecessors to the recent Norway 2030, the 1987 'Scenarios 2000' and the 2000 'Horisont 21,' were very similar. While the subject matter varied somewhat, they were nearly identical in scope (with national, primarily economic, concerns), method (three empirically based scenarios), content (assumption of a fixed 'Norway Model') and process ('primarily analytical projects conducted by researchers').⁸⁷

Within this historical context, champions of foresight within the Department of Administration Policy (within the Ministry of Labour and Government Administration,⁸⁸ and originally a planning unit) had a general mandate, beyond economic concerns, to try out new methods for meeting future development challenges of the administration policy area.⁸⁹ Drawing on meetings with relevant program representatives in Finland, Canada, Denmark, the OECD International Futures Program, and the European Union's president's advisory body *Cellule de prospective* (Forward Studies Unit), a scenarios project was proposed.

'Norway 2030' was soon commissioned by the Minister of Labour and Government Administration in 1998, as a two year project.⁹⁰ The key arguments securing the funding and high level support, involved emphasising first that recent issues, such as globalisation and the threat of losing oil as an energy source, were beyond the capabilities of current linear planning methods.⁹¹ Second, that 'the future is uncertain and multidimensional, and good planning requires that one is prepared for several different possible courses of development, not least those involving disruption of the expected paths of development.'⁹² Third, foresight was presented as a methodological approach that could invoke 'alternative strategies for public sector development.'⁹³

The scope of Norway 2030 centred on the key decision-making 'actors' of public administration as they related to significant national context 'factors.' The key difference from preceding scenario projects in Norway, and similar programs worldwide, was its explicit focus not only on structural domains, but also psychological, cultural and behavioural ones. The clearly admitted ambitious objectives of the project included:

- renewal and development of the strategic planning capabilities of government ministries, and the facilitation of greater collaboration between them,
- raising awareness of the importance of multiple perspectives on a longer term policy context,
- production of five future views for the public sector within Norway in a generations time (30 years), and,
- producing reference materials for both public administration, academic and industry organisations.⁹⁴

The scope of these objectives indicates that the Norway 2030 project was progressive in nature, and even sought civilisational change through the capacity building of foresight concepts and methods.

Operations

As a small project team (less than a dozen core staff) the champions of foresight became the convenors, facilitators, translators, assessors and also participants within Norway 2030. High grade policy analysts and writers, members of the group were also experienced in Action Research and Learning theory and practice, a new approach currently gaining ground within future studies internationally.⁹⁵

An initial conference, 'The Use of Futures Studies in Public Management Reform', began the project in 1998, and clearly indicated its main purpose: changing the public sector through use of foresight methods.⁹⁶ With an open invitation to senior officers from all ministries, and a wide range of international guests from other administration related foresight programs, the conference generated wide based support. As a consequence, the project was presented to members of Government, and via discussion at two government conferences soon thereafter, it was accepted as a formal government project with the sustaining credibility that brings.⁹⁷

Norway 2030 involved two main phases, each lasting a year. The first phase divided the participants into four working groups, chaired by a facilitator from the convening team. The working groups each focused on a specific predetermined topic, and creatively generated five partial scenarios involving significant actors and factors of influence for the public sector in 2030.⁹⁸ Incorporating references to current knowledge, and external submissions, the final partial scenarios were published for comment, and generated more submissions for the second phase.⁹⁹

The focus during phase one was on participant learning and stakeholder enrichment through engagement with the process. The focus on process learning, or action learning and research, also characterised the translation of the projects progress to various broader audiences. The Norway 2030 convenors published seven scientific and 10 other articles (as well as project reports), delivered 35 written lectures and talks, made in excess of 80 presentations, and conducted some 30 interactive seminars, amongst other liaison, and relevant program input and participation commitments.

Three significant aspects of Norway 2030's facilitation stand out as factors of success towards the realisation of the project's objectives. First, participation was voluntary, and on a personal basis, without any formal representation of, or liaison to, their organisations of origin formally being involved.¹⁰⁰ From this 15 of 16 ministries agreed to provide willing participants, totalling 70 people – an unusually high number for central government administration projects.¹⁰¹ Second, a project norm of allowing 'silly questions,' 'far out ideas,' and 'politically incorrect' arguments was encouraged, while

the traditional of ministries, participants' positions of seniority, and 'special interest representation' were actively discouraged.¹⁰² This created a safe space for creative exploration of alternative futures, and more significant participant learning to occur. Third, the progressive outputs of the project were made freely available to interested stakeholders, and other government employees unable to participate personally, with an invitation for written statements of their perspectives to be submitted. This attracted a significant response, and were used in building the final scenarios.¹⁰³

The second phase drew together the first year's contributions, and effectively allowed for the process to begin from square one in developing the full scenarios. Three methodological aspects in particular contributed to the success of the final scenarios' reception. First, from the clear focus on process within the project, the first years activities were designed to involve 'scenario-learning,' the second 'scenario-building' and finally, for implementation, the outcomes and outputs were clearly promoted as sources for informing separate, localised processes of 'scenario-planning.' The clear delineation of purposes served to clarify expectations and enhance the achievement of each phases' objectives.¹⁰⁴ Second, an overall critical approach to the project's content and methodology characterised the program. This resulted in the development of a new scenario methodology, one actively involving multiple perspectives, or psychological worldviews, resulting in what they called 'perspectivist scenarios.'¹⁰⁵ This approach was ideally suited to their objectives, and is recognised internationally as representing best practice.¹⁰⁶ Third, the scenario method involved the use of wildcards, a unique 'spiders web' scenario generation approach (with an 'octagon of variables')¹⁰⁷, and they incorporated personal 'day in the life' and multiple perspectives on the past (eg, from 2030 looking at 1970 and 2000).¹⁰⁸ These aspects in combination were designed to elicit 'critical reflection' from both participants and readers of the scenarios.¹⁰⁹

Outcomes

Assessment of the program's process was conducted throughout the study by the convenors. The general findings were that most participants found it to have been 'both very informative and stimulating.'¹¹⁰ A self assessment for participants was also conducted, to identify changes in thinking. Initial brainstorming of highly improbable factors of influence in 2030 were reassessed, revealing that 62% of them were now regarded by participants as either 'probable or even extremely probable.'¹¹¹

Norway 2030 generated significant media interest throughout its duration, as well as substantial academic attention, well exemplified by the fact that its methods and processes have been the subject of at least three master's theses.¹¹² Since the project's completion in 2000, a book detailing the process, method development and scenarios has been published (by the convenors), and more than 20 projects have followed-on from, or been uniquely inspired by, Norway 2030. In addition, the project manager (Erik F. Øverland) has been tasked with developing a large scale research program 'oriented towards innovation and renewal of public sector (The Norwegian Resource Council/FIFOS).'¹¹³

The book Norway 2030 and wrap-up papers reviewing the successes, limitations, proposals for government and the difficulties involved in the project, also made available in English, have made the program's learning's uniquely available to continue to achieve its objectives.¹¹⁴

While the project was short run, its impact is still fostering interest in foresight and the furthering of the project's objectives in Norway. The program's outputs remain sources of frequent reference as the uniquely ambitious critical, progressive, process learning approach, which integrated a breadth of focal domains, continues to generate numerous valuable outcomes for participants and the Norwegian public sector.

OECD International Futures Program

Origins

After four decades of economic development in and between its member nations, the Organisation for Economic Co-operation and Development (OECD) has gradually broadened its scope. The OECD now provides analysis relevant to most market economies of the world, and in particular, focuses on how various policy areas interact with each other, at national and international levels, in terms of their impact economically.¹¹⁵ That is, the OECD grapples with the turbulent and multi-faceted economic globalisation.

The increasing change and complexity of economic globalisation, the need for greater coordination of national economic efforts, and the recognition of the importance of longer term time frames in considering the management of global economic issues, contributed to the context within which champions of foresight arose within the OECD. The end of the cold war, the proposed formation of the European Union, and limits of traditional economic analysis were some of the issues demanding new methods of analysis and planning. Foresight was proposed to hold methods capable of improving current, linear approaches, by moving beyond strict disciplinary lines and accommodating the breadth of possibilities that, until recently, had seemed fanciful.

In 1990, under the General Secretariat, the 'Advisory Unit on Multidisciplinary Issues' (International Futures Program or IFP) was established. The purpose of IFP has been to provide the OECD with 'early warning of emerging issues,' identify major developments and analyse 'long-term concerns to help governments map strategy.'¹¹⁶ The IFP is 'advised by an informal group of Ambassadors to the OECD.'¹¹⁷

Around a half dozen prodigiously qualified and highly experienced multi-disciplinary staff have convened and facilitated the IFP team since its inception. Their backgrounds include academic publishing and lecturing, diverse corporate and/or government policy experience, and most are PhD qualified and speak multiple languages.¹¹⁸

Operations

The IFP has gradually expanded into four main components of activity. These include:

- a network of participants and stakeholders,
- a central information database,
- a series of futures forums, and,
- a range of subject specific projects.

The IFP is known for its extensive networks (around 900 participants) amongst high ranking government policy/strategy officers at national, regional and international levels, corporate and civil society strategy and research units, and subject matter experts from academic institutions around the world.¹¹⁹ This network is facilitated by the IFP convenors to function as the main means of identifying important subjects, relevant experts, and possible participating stakeholders. Through various futures forums, different groups of participants are invited to focus on significant issues in a multi-disciplinary manner within a systemic perspective, and occasionally go on to form steering committees.

These subject specific convening committees, primarily facilitated by the IFP, generally establish a futures project, setting its scope and objectives, securing volunteer participants and sustaining stakeholders who contribute financial, logistical and human resources etc.¹²⁰ In turn, participating and/or sustaining organisations generally provide representatives for the continuing project steering committee, which convenes a dedicated project team who facilitate the project's activities. One or more of the IFP core staff are generally within the project team, often facilitating iterations of widespread consultation, and the writing, editing and completion of the projects report.¹²¹ As a general guide, most IFP projects are conducted under the auspices of a relevant operational unit of the broader OECD organisation.

In addition to project based funding, the IFP is financially sustained by grants from national governments, international organisations and around 50 corporate partners.

Supporting the IFP Network is an information system, including an extensive online database of both 'published and unpublished sources, in over a dozen languages' identified by the IFP convenors, or submitted by participants.¹²² The databases facilitate publication of numerous working papers for feedback, issues identification and the identification of 'fresh insights or innovative approaches to the long-term issues facing the public and private sectors.'¹²³

In addition to the network and project participants, broader translation of outcomes and outputs of the IFP's activities for diverse audiences are made available through: the IFP convenors liaising with and assisting future projects around the world; a bookshop of their key project findings; the presentation of detailed topic/forum/project overviews in numerous languages (variously English, French, Japanese, Italian, German, Chinese, and Portuguese); and a public website.

Outcomes

The OECD-IFP is seen as one of the premier government futures organisations in the world because of its ability to maintain active networks amongst both traditional planning groups and emerging specialists around the world.¹²⁴ A rich source of support for various national programs, the outcomes of the IFP in terms of networking are the key, yet often intangible, success of the program.

The output of project publications and related information sources is seen as high quality, and usually breaking new ground in the international arena of status quo economic and social policy formulation.

The key factors of success for the IFP can be seen in its high level positioning, and high calibre multi-disciplinary staffing, processes of extensive networking and consultation, and significant organisational support, both from the OECD, and by relevance, external companies, governments and civil society organisations.

Overall, the IFP employs systemic methods, beyond linear forecasting, and focuses on major structural domains and some cultural relationships. The IFP can be characterised as a mainly pragmatic organisation which develops the capabilities of foresight concepts, and to a lesser degree, methods and tools, amongst its participant', audience' and, by purpose, its commissioning organisation's policy formulation processes.

Australian Public Service (APS) Futures Forum

Origins

Australia's Commission for the Future, instigated by the Honourable Barry Jones in 1985, struggled to achieve any successes in over a decade of operation, and, according to Jones, was a 'qualified failure.'¹²⁵ As a result, many Australians, in both the private and public sector, became more critical of futures studies as a whole. The experience did, however, till the soil for foresight in Australia. In combination with increasingly complex issues surrounding geo-politics, regional stability, debated economic outlooks, 'wicked problems,' and more impending 'strategic big questions' in general as Australia entered in 21st century, foresight methods have grown in use.¹²⁶

In addition to a continuing trend of foresight methods being used in defence forward planning, a broad range of private consultancies, often working for larger enterprises and/or with environmental related management issues, and occasionally with Government agencies, have grown in number over the past decade. While many using foresight methods in Australia simply call them 'another strategic management tool,' more formal national level foresight projects have been conducted.¹²⁷ Recently for example, scenario planning has been conducted in the private sector by the Business Council of Australia, in the public sector by the Australian Communications Authority and in the research arena, by CSIRO's Sustainable Ecosystems Unit's various Resources Futures scenarios.¹²⁸

In the Australian Public Service (APS), a 2003 survey of foresight methods use revealed that relatively 'simple' applications of 'environmental scanning,' 'what if? Analysis' and 'scenario planning' are the most commonly used, and also returned the most 'satisfactory' outcomes.¹²⁹ A recent review of the types of foresight projects being conducted nationally, identified Australian practice to generally be of a pragmatic interest, with many, however, having a progressive intent, and focusing mainly on structural domains.¹³⁰

Within this context of Australia's changing policy environment, an increase in foresight projects, and mostly pragmatic foresight, the APS Futures Forum is the only visible government foresight network.

In 1999 the Office of Strategic Crime Assessment acted as a champion of foresight by inviting a number of public sector agencies with an interest, or recent experience, in foresight work, together in an effort to coordinate knowledge and expertise, and share lessons learned.¹³¹ Five agencies and an experienced public sector foresight consultant convened to discuss their options. The options canvassed for increasing foresight capabilities with the APS were limited due to many participants being unable, for security reasons, to reveal much of their projects. A less challenging set of objectives were established, and a futures forum was determined as the best form for achieving them, in a way that could openly include all interested parties. The consultant, Kate Delaney, who had established the Defence Futures Forum of some 300 people, was invited to facilitate a general APS futures forum.¹³²

The purpose of the Forum is to provide 'people interested in the analysis of the future and the creation of strategy to work within it.'¹³³ The Forum's objectives, the same today, include:

- establishing a network of APS employees interested in foresight methods,
- keeping members informed of foresight methodological developments,
- facilitating the sharing of lessons learned and the findings of different foresight projects, and,
- sponsoring occasional training in futures methods and tools.¹³⁴

Operations

'Working-level senior officers' from the APS commission were invited to assist the steering committee, and offered to sustain the Forum through the provision of a website and meeting facilities, and providing access to more senior policy and strategy level networks for invitations to participate in the Forum. The Attorney General's office volunteered to act as a secretariat, writing-up forum events. Gradually, the convening committee has come to include an equal number of private sector consultants and department representatives, generally totalling six active members.¹³⁵

The steering committee facilitate the agenda and invitation of speakers, act as the contact point on behalf of the forum, and review requests for communications via the network. A relatively inactive network, its nature reflects a cautious approach to foresight within the APS, and this is also reflected in the speakers invited. On occasion, some departments act as sustainers through agreeing to cover travel costs for speakers but, on the whole, the network, its speakers, facilitators and convening committee all engage in the Forum and network on a voluntary basis. Membership is open to all, with no conditions on participation.

The speakers and topics covered within the Forum vary across three main areas while always maintaining a strict relevance to the public sector. The areas follow on from the objectives, in covering methodological developments, current interest issues, future policy concerns, and the findings of relevant foresight projects. The network is also used for information enquiries by members, and the convening committee also act as translators through the dissemination of recent relevant reports, write-ups of previous Forums, and providing notice of relevant training. All aspects of communication through the network are carefully considered by the committee, and no discussion lists or general access to members is active within the network.

Consisting of approximately 300 members, the Forums have previously attracted around 40 participants, mainly along subject matter interests. From 2003 however, when the forums became bi-monthly instead of monthly, participation increased to around 120-150 per forum. The core of participants from the APS are senior level officers (Executive Levels 1-2) from strategy and policy units across most agencies. Approximately 10% of participants function in roles which expressly mention foresight or futures studies.

Outcomes

Acting to gently foster the APS's capability for understanding and using foresight concepts, methods and tools, the Forum varies from pragmatic, through progressive interests depending on the speakers invited and the methods canvassed, while focusing predominately on structural domains.

The continuation of the Forum speaks to its modest success; its ability, however, to move beyond its current objectives, to become a more active and transparent network is not clear.

The Australian Experience

The Australian government has used foresight in the past and, more recently, the Resources Futures Group in CSIRO used futures approaches in its "Future Dilemmas" project. Two particular examples of government foresight in Australia - ASTEC, the Australian Science and Technology Council, and the Commission for the Future – are worth briefly exploring at this point. More recent work undertaken by James is also investigated.

ASTEC

The Australian Science and Technology Council (ASTEC) was established in 1979 to provide advice to the Commonwealth Government on science and technology. ASTEC was independent and governed by a Council, with members from the science and technology community. It undertook a range of foresight projects until its demise in the late 1990s. Reviews of the work of ASTEC are numerous,¹³⁶ undertaken both at the time it existed, and in more recent years.

These reviews are consistent in two areas: that ASTEC was, in its time, a leading example of government foresight (see for example, Martin and Irvine, 1989), and that the issues associated with decisions to close down ASTEC's work were to do with two major factors:

- there was no structured and coordinated approach to follow through on reports and outcomes,¹³⁷ and
- "the distributed nature of power in federal decision making [meant] that its recommendations are unlikely to be implemented unless there is sufficient political support among relevant agencies".¹³⁸

Smith and Halliwell¹³⁹ also suggest that "its demise was more about politics and the incoming Liberal government wanting to have its own approach, rather than relying on the structures put in place by the previous Labour government".

ASTEC undertook a number of studies during its existence. A major study "Matching Science and Technology to Future Needs: 2010" was undertaken from 1995-1996 and was substantial both in its approach and its findings (<http://www.dest.gov.au/archive/science/astec/future/intpers/contents.html>). The report of this study, however, coincided with a change of government, and it was not supported by the incoming government, even though it was strongly supported by the academic, business and broader community. (??)¹⁴⁰ indicates that, "the outcomes of the ASTEC study influenced strategic technology planning in many Australian organisations and encouraged many different organisations to undertake foresight".

Other identified outcomes were outlined by a review undertaken as part of the Millennium Project:¹⁴¹

"The project has demonstrated that foresight is a useful tool in helping to agree and move toward national goals for the future.... As in other foresight programs, the [study] has also shown that foresight can help to build consensus, assist communication between different groups, and act as a focus to developing a longer-term commitment and visions of the future... Nevertheless, although the value of the ASTEC foresight process has been widely acknowledged, the direct outcomes have, to date been somewhat limited. The priorities for action... have largely been implemented or examined in a low key manner... An explicit commitment to continued foresight has not yet been forthcoming, although there has been undoubtedly a marked rise in the use of foresight processes, and in particular scenario planning."

ASTEC established a number of elements that needed to be taken into account in any foresight process established for Australia:

- foresight needs to involve consultation and interaction between scientific experts, research users, policy-makers and the wider community
- foresight processes must be transparent. They must allow the underlying assumptions, analytical framework and data inputs to be subject to external scrutiny. Such openness also allows non-conformist views to be given equal weighting with conventional ones and allows the possibility of identifying emerging paradigms.
- foresight is neither simple nor is it unproblematic. Foresighting provides an input to decision-making but does not provide a definitive solution. As such, most international experts have come to agree that it is likely to be most successful as a continuous process rather than a one-off task.

While ASTEC was replaced by another science and technology structure which has existed in various forms since then, the expertise gathered together during the ASTEC projects has been dispersed. Many of these individuals continue to work with foresight projects, but there is no national structure or activity to facilitate formal networking and sharing of knowledge. As James¹⁴² indicated, "ASTEC's demise was associated with a reduction in Australia's effort towards foresight or technology assessment, aside from a few private think tanks and some more recent government department and agency effort".

Commission for the Future

The Commission for the Future was established in 1985 and closed in 1998, around the same time that ATSEC ceased operations. Slaughter¹⁴³ has written extensively on the lessons to be learned from the Commission for the Future so that those lessons can form the basis for the further development of institutions of foresight, and to avoid the view that the Commission was being dismissed as a fanciful experiment. He identifies four major periods in its development:

1985-1988: the search for legitimacy
1988: the holding operation
1989-1991: the social crusade
1991-1994: the dawn of professionalism

Slaughter sees as the critical factor underpinning the demise of the Commission as its lack of legitimacy: "it was widely seen as a politically-driven entity, rather than a commercial of professional one. It won few friends in parliament, in business, in education, in intellectual circles or in contemporary social movements. So for most of its life it lurched from one crisis to another, despite the best efforts of the board and successive directors".¹⁴⁴

The lessons learned from the Commission's experience cover appointment of staff, location in government, links with policy and some ideas around publications. The need to have clear core purposes, secure funding, building on learning from other projects, using qualified staff and robust methods, building relationships with constituencies and networks in Australia and internationally, and the need for institutions of foresight to contribute more generally to research into the nature and effectiveness of applied foresight and futures research – all of which are consistent with lessons

learned more generally from other government foresight projects. Importantly, Slaughter highlighted the need for quality control as “second rate futures work is worse than none at all because it provides spurious grounds for the dismissal of the whole enterprise”.¹⁴⁵

Currently

More recently, a research paper by James prepared by the Parliamentary Library¹⁴⁶ presented an overview of key government foresight programs in Australia, Britain and New Zealand. While focusing on science and technology foresight for Australia, the paper commented that:

since the demise of the Commission for the Future and ASTEC, Australian governments do not appear to have made any specific and ongoing program commitment to scenario planning or foresight, aside from a series of individual agency or departmental initiatives. Australia could do well to take a whole of government initiative and think further ahead than the few years characterised by our electoral cycles or budgetary periods. With a view to the future, we may well commit better to the tasks ahead with a sense of meaning and unity as a national and improve the policy process. Nonetheless, it will be important to ensure a means to facilitate actions on proposals coming out of the foresight process.¹⁴⁷

James continued on to suggest a way forward:

Were Australia to proceed with this idea, the Commonwealth Government would need to establish the parameters, funding and operation. The proposed output and identification of appropriate subjects for study would be matters for wide consultation to determine. One possible means to proceed could be the creation of a response group or network within the Department of Prime Minister and Cabinet to facilitate a ‘whole of government’ approach to future issues ...It may be feasible to create such an internal section without requiring significant resources or restructure ... Australia could do well to take a whole of government initiative and think further ahead than the few years characterised by our electoral cycles or budgetary periods. With a view to the future, we may well commit better to the tasks ahead with a sense of meaning and unit as a nation and improve the policy process. Nonetheless, it will be important to ensure a means to facilitate actions on proposals coming out of the foresight process.

Anecdotal reports indicate that this paper was considered ‘brave’ at the time, and no action to re-introduce foresight into the Australian government’s policy framework has ensued. This paper, together with the existence of the APS Futures Forum, however, suggests that there is a core of staff in government who are exploring ways to integrate futures approaches into their work at the local level. This is an important factor to consider in the design of any national foresight strategy for Australia.

A Framework for a National Foresight Strategy

Introduction

As indicated earlier, the original aim to produce a number of alternative designs was changed when it became clear during the project that indicators of good practice are emerging from past and existing government foresight projects and programs. In particular, recent work undertaken in Europe includes extensive evaluation of projects, and identification of successful structures and practices. Rather than produce a range of design models therefore, this section synthesises findings from the desktop scan and the case studies to develop a series of good practice statements to underpin the development of a national foresight strategy for government.

The good practice statements are a reflection of the current state of play in government foresight. As governments integrate foresight into their policy making processes over time, the good practice statements identified here will need to be updated and reviewed, based on the practical experience of those implementing government foresight.

Good Practice Statements

These good practice statements provide a clear framework to enhance the success of any government foresight work. In preparing these statements, there is an assumption that their use follows agreement to adopt a foresight approach to inform policy development in government. Such an assumption is probably dangerous, since it assumes that the value of foresight is readily apparent which, it has already been suggested, is not necessarily the case. If it was, then the Australian government, along with business and education, would have already integrated foresight into their mainstream functions and activities. As Ramos indicates, communication of foresight, whether to an individual or to a government, needs to take account of how the people involved view the world, rather than from the perspective of someone already attuned to foresight.¹⁴⁸

There is therefore a significant preliminary step that needs to occur prior to the submission or discussion of any proposal to use foresight in government, which is obtaining the decision to do foresight work. Considerable work on coalition building needs to take place in this initial stage. Loveridge et al¹⁴⁹ suggest that “the need to employ ‘new’ policy instruments for what are perceived to be ‘new’ policy challenges was the main reason for embarking on a foresight program”, with internal foresight champions important in the process to influence decision making. From an integral perspective, what is also needed is a clear understanding of the worldviews, motivations and thinking systems of the people who will make the decision to use foresight, so that not only can a proposal appeal to their individual/exterior sense of achievement and reward, but also to their individual/interior motivations and values. This latter step is obviously not straight-forward, and would require particularly skilled foresight practitioners to spend some time with the decision makers and/or their staff.

The actor framework developed by Stewart for this research also needs to be considered in the design of a foresight project. The good practice statements presented below are all ‘allocated’ to different actors involved in foresight work. Foresight work is highly participatory, and a range of people need to be involved at any one time. Stewart makes the point that the roles are not independent, and that a single actor can have more than one role. The scope of the actor framework and the allocation of roles within it reflects the inherent complexity in a foresight project, and the consequent need to ensure that such projects are well designed and managed.

People: Staff and Stakeholders

Worldviews

It is recognised that the ability to think about the future is present at all levels of government, and that futures practitioners come in many 'guises'. The latent knowledge of existing staff, who may be working across a range of functional areas, has been identified as a first step to ensure that people chosen to do futures work have demonstrated an aptitude for engaging with the future, and understand the value of multiple paradigms and worldviews.

Staff to be involved in futures work have been formally trained in foresight approaches and thinking to ensure they have sufficient knowledge and understanding to run a foresight process, and for their roles to have sufficient credibility with external stakeholders.

It is recognised that, for foresight to be successful, staff need to be have permission to be different, and to provide a 'dissenting voice'. Staff must have permission to challenge existing assumptions underpinning management thinking. Ways to manage any resulting 'organisational discomfort' are integrated into the process to be used.

Staff Skills, Knowledge and Roles

Staff working in futures have been trained in the methods to be used and have an understanding of futures concepts and approaches. Formal qualifications in futures studies are pursued for appropriate staff.

Staff working in futures are supported to build effective external networks, to both avoid 'reinventing the wheel' and to be exposed to sources of new thinking.

Leaders and Sponsors

Leaders and 'champions' understand what foresight is, and recognise government's responsibility for future generations. They are willing to provide leadership to instil this understanding in others.

There is top-level support for foresight, an interest in the process, and a commitment to use outcomes in policy development.

There is a clear understanding of the scope and nature of roles to be undertaken at different stages in the foresight project.

People who will be responsible for ensuring the use of outcomes in the policy process have been identified at the outset, and have accepted that responsibility.

Securing Buy-In

It is recognised that the support of managers at all levels will be required for the successful implementation of futures work in terms of linking outcomes with policy development. Managers are therefore 'exposed' to the concepts of, and need for, futures work and are seen to support the process. Thinking systematically about the future is recognised as a desired managerial attribute.

Stakeholder Participation

A wide range of internal and external stakeholders is involved in foresight work. Stakeholder groups can include experts in relevant areas, as well as participants from within government, business, non-profits and non-government organisations.

The nature of input required for particular foresight work determines which stakeholder groups are consulted. A wide range of expertise is sought.

Stakeholder expectations about participation, goals, objectives, resources and outcomes are managed effectively.

Effective use is made of electronic communication methods to improve the quality of networking among stakeholders.

Opportunities are made available for individuals to engage with foresight in a variety of ways that acknowledge different degrees of understanding about foresight and how it can be used.

A stated aim is to establish a network among participants which can continue once a particular project has been completed.

Project Management and Execution

Purpose and Rationale

It is understood that foresight is based on the premise that it is impossible to predict the future, that futures work is about better understanding uncertainty, and that foresight is best used to undertake a broad evaluation of potential future developments. People involved in foresight work at all levels understand and accept this premise.

The purpose of foresight work is clear, for example:

- to identify issues likely to have an impact into the future and use insights gained as a general input into policy processes,
- to identify priorities to inform funding decisions,
- to build networks, and/or
- to build a continuing futures capacity in government and in participants.

It is understood that the benefits of futures work may take time to realise and that project outcomes may have an impact on policy years after the project has ended. Therefore, it is also recognised that futures work is best conducted as a continuous process of learning, rather than a quick one-off exercise.

Objectives

Objectives are clear and agreed with participants.

The needs any given foresight project will address are clear, that is, there is an identified customer for the foresight work.

Objectives are realistic and not overly ambitious to ensure that expectations about outcomes are achievable.

It is clear at the outset that the aim is to make better informed policy decisions not create better descriptions of the future.

Structure of Foresight Units

There is a discrete futures unit which is structurally located “on the edge” of government, with the exact model dependent on the context. This unit can undertake a number of roles depending on its remit, including undertaking foresight work, and providing a coordinating function for the foresight community. The unit reports to a board, committee, advisory council or group that is close to government, and which has overall responsibility for foresight, direction setting and identifying long term priorities.

The futures unit works to embed a foresight capacity in different units and departments across government and to establish networks, to both increase the number of people with foresight expertise, and to allow projects to be tailored to meet the needs of those units and departments.

It is recognised that a futures group has to be able to do some work which is independent of the needs of immediate sponsors or projects.

There is a small core staff appointed to coordinate futures work. Outside expertise is sought when appropriate.

Clear links with relevant government departments and agencies have been established to ensure effective communication and collaboration.

Scope

The scope of particular projects is clear and agreed. Scope can include the focus of the project, coverage of particular areas to be investigated, degree of participation by, and consultation with, stakeholders, and the timeframe (between 5 and 30 years), and the timeline for the project.

Processes

The overall process to be followed is determined after objectives have been set, and desired outcomes have been identified.

Staff identified to work on the project bring particular skills and knowledge required at different process stages.

There is a realistic assessment of the time it will take for a project to be completed.

There is a quality assurance system in place which ensures that best practice informs procedures and practices used in processes.

There is a step in the process that includes time to be spent on raising awareness about foresight, its benefits and how individuals can contribute.

It is recognised that the process itself is as valuable as the outcomes of the project and that, accordingly, management of the process is undertaken by qualified staff who are skilled in the methods being used.

Stakeholders are involved at every stage of the process.

There is agreement about the analytical timeframe. A time frame of between five and 30 years can be chosen, depending on the objectives of the work.

Links to ensure outcomes are used in the policy development process are agreed, documented and understood.

Regular progress reports on the project are provided to key stakeholders.

Funding
Funding for foresight work is agreed. Sponsors are identified, costs are agreed, and the unpaid work in terms of time and effort of participants is recognised.
Methodologies
<p>Methods and tools are chosen depending on the nature of the particular project, and are aligned with the purpose of the work and suitable to the culture of the organisation.</p> <p>Methods are integrated with current foresight theory, and not chosen in isolation from that theory.</p> <p>There is adequate support and training in methods provided to participants, and the methodology has the confidence of, and is understood by, participants.</p> <p>Information used in the process includes both quantitative and qualitative data and resources.</p> <p>Futures processes includes the use of 'wildcards'.</p> <p>Pilot and/or feasibility studies are used as a way to convince others of value of work to be undertaken.</p>
Outcomes
<p>Methods for disseminating outcomes and results are agreed at the beginning, with particular attention paid to the design and content of electronic publications.</p> <p>Outcomes from futures work is communicated in ways that the mainstream organisation and decision makers with shorter term horizons can understand. Outcomes are integrated into mainstream activities, such as training, where that is appropriate.</p> <p>The timing of the release of project outcomes is aligned with decision making cycles in order to be able to inform policy and budget decisions.</p> <p>The long term focus of futures work around improving the quality of thinking about the future and as generating discussion as inputs into continuing policy development is clear in external communications.</p> <p>There is a clear idea about how, in specific terms, outcomes will be used to make better policy decisions. Those outcomes have legitimacy in the policy development process.</p> <p>There is both management and political accountability for short- and long-term outcomes.</p> <p>Outcomes are given a 'reality check' with key stakeholders to ensure a high degree of credibility and technical feasibility.</p> <p>Networks developed during projects are supported to remain in existence as part of the development of a national foresight community.</p>

Assessment, Evaluation and Renewal

There is an evaluation stage built into the process which allows the foresight program to be renewed over time so that it remains relevant to government.

Care should be paid to designing evaluation processes that take into account both short-term and long-term benefits of foresight work.

Feedback is sought from participants and stakeholders about the usefulness of the work, particularly in terms of insight and guidance provided, the degree to which multiple perspectives were integrated, and improvements to the process.

Evaluation processes focus around learning as well as accountability, and include assessment of both intended and unintended outcomes.

Evaluation processes will assess different factors depending upon the context and nature of the project, but could include short term and long term use made of formal outputs such as environmental scanning, scenarios etc, links with decision making processes, and value of networks established. Evaluation should also assess the degree to which individuals believe their own foresight capacities have been enhanced.

Project Context

Understanding Cultural Influences

The dominant culture is understood, particularly the influence of organisational politics and psychology on the policy making process, as is as the historical factors shaping the nature and structure of the organisation.

Futures work has been designed to achieve a balance between the organisational culture and desired outcomes.

It is recognised that each foresight project or activity will need to be tailored for the context, and involve a range of different people.

Information and Knowledge

Information used in foresight work includes both quantitative data such as trend analysis and projections, and qualitative data such as the rich descriptions of alternative futures generated by scenario processes.

Workshops to improve the knowledge of the complexities of issues to be explored are included in the design of foresight work, particularly for relevant decision makers.

Information gathered during futures work is stored in a 'knowledge base' which is regularly updated through environmental scanning and provides a knowledge sharing platform. The futures unit is responsible for monitoring issues and trends, assessing cross-sectoral impacts and interrelationships and possible implications for future policy development.

Concluding Comments: A National Foresight Strategy for Australia

Introduction

Slaughter indicates that social foresight is likely to emerge only when business, education and government are using futures approaches routinely in their strategy and policy processes. Of the three, government is in a unique position to provide leadership in the development of a social foresight capacity, to provide a coordinating role across organisations, groups, networks and practitioners who are already working in the futures field to develop a foresight community in Australia, and to establish international links with other governments.

As indicated previously, there are a range of possible roles for government to contribute to the development of a social foresight capacity, including:

- the use of futures approaches within government to build a government foresight capacity to inform its policy development,
- the development of a coherent and permanent structure to support the range of foresight work that already exists, to ensure systematic application of outcomes throughout Australia for the optimum benefit of the country,
- the identification, coordination, linking and support of individuals and groups using futures approaches in Australia, to facilitate sharing of knowledge and good practice, and the use of futures approaches in strategy and policy development more generally, and
- the building of international networks and relationships to contribute to the emergence of social foresight as a global capacity.

Each of these roles requires different approaches. Government use of futures approaches could be project based, supported by continuing environmental scanning. Ensuring there is a system in place to coordinate or oversee diversity of foresight work in Australia would require the establishment of a knowledge base, and a way for practitioners and stakeholders to interact effectively with it (see for example, Shaping Tomorrow, <http://www.shapingtomorrow.com>). Developing and supporting networks among practitioners, stakeholders and researchers would need effective communication electronically and opportunities to interact face to face (see for example, the UK Futurists Network <http://www.futuristsnetwork.org.uk> and the Tomorrow Project <http://tomorrowproject.net>). Building international networks would occur in the usual way by making contact with recognised centres of excellence overseas, attending relevant conferences, visits and continuing communication.

Focus of Government Foresight

A national foresight strategy for government has to take into account dual perspectives – that of the more internal focus on the nation itself, and the constituent communities, organisations and structures, and a more externally focused view of the position and role of Australia in the international arena. Government foresight work then needs to address issues and challenges that relate both to Australia's needs, but which also contribute to strengthening the sustainability of the planet. As Ramos¹⁵⁰ indicates, such an approach:

would seem to require both progressive foresight aimed at societal progress which transcends partisan ... interests, and a civilisational foresight that can play a role in global progress in the context of the challenges faced by all.

But, as discussed earlier, both progressive and civilisational foresight rest on the ability of individuals to understand what foresight is all about, and to then be motivated to become involved in foresight projects and work beyond their immediate environments. So while the government may have a progressive/civilisational focus, care needs to be taken that foresight work is carried out in ways in which those who feel more comfortable with shorter-term horizons can relate. Foresight work has the capacity to demonstrate to participants that they can ultimately make a difference in the world, but recognition takes time as people are immersed in the futures discourse and begin to develop confidence and commitment to foresight. Practically then, a national foresight strategy should include opportunities for all types of foresight work – pragmatic, progressive and civilisational – so that participants, depending on the degree of development of their foresight capacity, can choose the work they want to do, whether that work is related to a local, national or global problem. In this way, a critical mass of ‘foresight aware’ individuals begins to grow.

Designing Government Foresight

A common way to view the design and implementation of government foresight work has been to identify three phases: pre-foresight (preparation), foresight (implementation), and post-foresight (evaluation). This remains a useful classification, particularly when the preparation phase is expanded to include selection of staff, coalition building and tailoring of the foresight message to leaders and sponsors.

Choosing the focus for particular projects involves consideration of a range of factors such as current developments in key areas of interest, future challenges, the available of people with interest, knowledge and/or expertise in the area, availability of sponsorship, a clear ‘value-add’ component, and the availability of adequate resourcing. The imperative for particular projects often stems from perceptions of an impending crisis which creates an environment conducive to the use of foresight approaches.

More generally, designing foresight work needs to take into account the fact that it is a social and participative process and best undertaken within a wider, established foresight culture. Martin and Irvine¹⁵¹ suggest that the lack of such a culture is a determining success factor:

... this has been a precondition for the comprehensive long-term ‘visions’ of future possibilities and needs which have proved so important in providing an appropriate context for the effective integration of foresight with decision making. It has also helped shape the informal networking and consultative processes among academic and industrial researchers that are crucial in framing timely, relevant and informed advice on future policies...

Such a supportive culture is not readily apparent in environments where the use of futures approaches has not recognised as useful and in which the here and now has taken priority over the longer-term future for society. In Australia, the existence of the APS Futures Forum and Ramos’ work indicates, that there are established, diverse communities of foresight practice, and tapping into these communities can provide the groundwork for the emergence of strong and dynamic national foresight culture over time.

Leadership Responses

The way in which foresight is presented to government ministers, heads of departments and others and how they are likely to respond needs to be carefully considered. Astute actors will recognise their own innate foresight capacity as soon as it is presented to them. The critical element is to be able to differentiate individual foresight from organisational foresight and social foresight capacities, and to be able to demonstrate clearly why social foresight is an imperative that cannot be ignored.

Communication of the foresight imperative therefore needs to be judiciously tailored for those who have the power to implement foresight in government. For this reason, foresight proposals that emerge from within government rather than from 'outside', and which are based on knowledge of the system, processes and people, are more likely to succeed. Given the predisposition of some leaders, however, to prefer external consultants, the most realistic approach will depend on an assessment of the context and the people involved.

What is critical is for the foresight imperative to be inescapable, and not able to be ignored by those who believe their thinking is already sufficient to deal with any challenges the future may hold. This sort of view about the quality of thinking is understandable, but ultimately arrogant. It ignores the fundamental knowledge management tenet that we just do not know what we do not know. Acknowledging this tenet, however, can be interpreted as a sign of weakness in the current political and business environment, and leaders are more likely to want to appear decisive than to suggest that their thinking needs to be informed by a continuing inclusive process that engages stakeholders and broadens the scope and depth of thinking. Leaders in the world today are not rewarded for acknowledging uncertainty, but rather for suggesting a single way forward.

The future is not certain and never can be. For business leaders and governments to suggest that there is certainty, and that their way is the right way, is probably dangerous when the pace of change, the complexity of the interaction among well defined drivers of that change, and the human factor are added together. Uncertainty takes time to resolve, and that highlights another key factor which will affect recognition of the foresight imperative – time. Most government and business leaders are busy people, preoccupied with the here and now. As a result, they believe that they are too busy to think about the future in any systematic or open way. Short term problems and issues need solving now, and it is understandably difficult for leaders to take time out to first consider future implications before they make a decision. It is not yet recognised that taking some time out now to establish a way to integrate the future into decision making on a continuing basis would actually facilitate short-term decision making. Understanding the future better can only provide a clearer decision making context in the here and now because there is an agreed, consistent long term view.

Foresight and Policy Decision Making

Government policy today will have an effect well into the future, and it makes sense to try and understand that future as much as possible before making policy decisions today. What is decided in this first decade of the 21st century will continue to affect future generations well beyond the lives of those making the decisions, but this responsibility to protect the interests of future generations is lacking from much government policy and business activity today.

This monograph is not the place to explore the need to move from a short-sighted, individualistic basis for decision making to a long-term, shared, social perspective underpinned by a responsibility for future generations. What is needed today, and what can be achieved today, are systematic and information rich processes that tap into the thinking of a broad range of informed and intelligent stakeholders so that, over time, a shared understanding about potential futures for Australia is built to inform government policy decisions.

An Australian government that decides to use foresight to improve the quality of its policy decision making processes will have available to it a wealth of lessons from a long history of government foresight. An Australian government that also assumes responsibility for building a social foresight capacity across government, business, academe and community will have recognised and accepted its responsibility for future generations. An Australian government that always makes policy decisions in the context of the need to ensure a sustainable future for Australia, and for the planet, would be a world-leader.

A Social Foresight Capacity for Australia?

Foresight is not rocket science. Because it is an innate capacity we all hold, we are all able to recognise its value when that capacity becomes overt. This recognition, however, can be the proverbial 'double edged sword'. Individuals who are focused on their capacities and the short term may feel satisfied that they 'have' foresight, but fail to see the necessity to take their individual foresight capacity to both an organisational and a social level. This is where government can play a pivotal role, by ensuring that processes are in place for individuals to play a role in the development of a social foresight capacity that will sustain Australia now and into the future.

Foresight work can be viewed as a response to the challenges, problems and complexities facing individuals, nations and the planet in the 21st century. It provides a participative and collaborative approach to explore and discuss these challenges to better deal with the uncertainty inherent in the future. This monograph has explored ways for Australian government to consider how it might implement a foresight strategy to inform its policy decision making and, by doing so, contribute to the development of a social foresight capacity. Whether or not any government decides to take the lessons learned already and explore the value foresight might hold will depend on how many in government recognise both the strength of their own foresight capacities, and the imperative of accepting responsibility for future generations as a premise for decision making today.

Notes

- ¹ Ramos (2004)
- ² Slaughter, 2004, 173
- ³ Ramos (2004)
- ⁴ See Ramos (2004)
- ⁵ Slaughter, 1996, 1992
- ⁶ US state government foresight reference
- ⁷ Slaughter, 1996,2002, page 4
- ⁸ Slaughter, 2004 p 153
- ⁹ Note here about the work of Wilber.
- ¹⁰ Wilber (2000), page 90
- ¹¹ Slaughter (2004) p 217
- ¹² Slaughter (2004), p 218
- ¹³ Ramos (2004), p29.
- ¹⁴ Blackman 2001 p4
- ¹⁵ PIU Strategic Thinkers Seminar (2001), p1; Stewart and Green, (2004), p 3.
- ¹⁶ (European Commission, 2002: 5)
- ¹⁷ See Conway and Voros for a discussion of foresight as a strategic thinking capacity.
- ¹⁸ Benchmarking UK Strategic Futures Work (2001), p 22.
- ¹⁹ Ibid (same page)
- ²⁰ Martin and Irvine, 1989.
- ²¹ Martin and Irvine (1989) p 15)
- ²² sources for impediments
- ²³ ACUNU Millennium Project
- ²⁴ PREST and participants papers
- ²⁵ examples of reviews – Ducatel (2004)
- ²⁶ Voros (2001).
- ²⁷ UNIDO power point presentation (1995).
- ²⁸ See PREST work, and participation work
- ²⁹ Martin and Irvine (1989) p 10
- ³⁰ Crehan (2002)
- ³¹ Loveridge and Street (2003).
- ³² Loveridge and Street (2003), page 19.
- ³³ Loveridge 1998
- ³⁴ See for example, work undertaken by Fuller and Larue (2000), Miles and Keenan (2000).
- ³⁵ Fuller and Larue, 2000, p1
- ³⁶ See for example, Molas-Gallart et al (2001).
- ³⁷ British Council (2003), page 6.
- ³⁸ European Commission (2002).
- ³⁹ Tegart 2001
- ⁴⁰ Fuller and Larue, 2000, p4
- ⁴¹ Fuller and Larue, p 5.
- ⁴² Martin and Irvine, 1989, p 335.
- ⁴³ Fuller and Larue, p 5
- ⁴⁴ Fuller and Larue, p 16
- ⁴⁵ Swinburne experience.
- ⁴⁶ Henley (2001b).
- ⁴⁷ Slaughter (1999).
- ⁴⁸ Henley (2001 a&b), Loveridge et. al. (2001), ASTC (1994), and Skumanich & Silbernagel (1997).
- ⁴⁹ Rader (2003).
- ⁵⁰ Loveridge et. al. (2001).
- ⁵¹ The 'Blueprint for Foresight' was conducted by the University of Manchester Policy Research in Engineering, Science and Technology (PREST) unit.
- ⁵² Loveridge et. al. (2001).
- ⁵³ Loveridge et. al. (2001).
- ⁵⁴ Rader (2003), UK Foresight website, and Loveridge et. al. (2001).
- ⁵⁵ Rader (2003).
- ⁵⁶ Cunion (2004) and UK Foresight website.
- ⁵⁷ Cunion (2004).
- ⁵⁸ Loveridge et. al. (2001).
- ⁵⁹ Loveridge et. al. (2001).
- ⁶⁰ Loveridge et. al. (2001) and Cunion (2004).
- ⁶¹ UK Foresight Website.
- ⁶² Cunion (2004) and UK Foresight website.

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- ⁶³ UK Foresight Website.
- ⁶⁴ Cunion (2004), and, for example, see Foresight North-East's website: <http://www.foresight.org.uk/index.html>
- ⁶⁵ UK Foresight website.
- ⁶⁶ UK PMs strategy unit website, accessed June 2004, at: <http://www.strategy.gov.uk/output/Page696.asp>
- ⁶⁷ Rader (2003) and DTI's website is here: <http://www.dti.gov.uk/>
- ⁶⁸ Cunion (2004).
- ⁶⁹ UK Foresight website.
- ⁷⁰ Loveridge et. al. (2001).
- ⁷¹ Rader (2003).
- ⁷² Loveridge et. al. (2001).
- ⁷³ UK Foresight website.
- ⁷⁴ Cunion (2004).
- ⁷⁵ Cunion (2004).
- ⁷⁶ UK Foresight website.
- ⁷⁷ Rader (2003).
- ⁷⁸ Loveridge et. al. (2001).
- ⁷⁹ UK Foresight website.
- ⁸⁰ Cunion (2004) and UK Foresight website.
- ⁸¹ Øverland (2002b) p4.
- ⁸² Øverland (2002b) p4.
- ⁸³ Eerola (2002) p35.
- ⁸⁴ Overland (2002a) p23.
- ⁸⁵ Eerola (2002).
- ⁸⁶ Øverland (2002a) p208.
- ⁸⁷ Eerola (2002) p35, and Overland (2002a) p23.
- ⁸⁸ English version website: <http://odin.dep.no/aad/engelsk>
- ⁸⁹ Øverland (2002a) p18, & p 217-218.
- ⁹⁰ See: http://www.futur.de/en/6287_6338.htm accessed June 2004.
- ⁹¹ Øverland (2002b) p4, and Løwer (2002).
- ⁹² Øverland (2002b) p4.
- ⁹³ Øverland (2002b) p4.
- ⁹⁴ Øverland (2002b) p6.
- ⁹⁵ Øverland (2002b) p4.
- ⁹⁶ Øverland (2002a) p218.
- ⁹⁷ Øverland (2002a) p217.
- ⁹⁸ The topics were 1) global development – external influence, 2) economic adaptability in Norway, 3) values, culture and social patterns in Norway, and 4) social organisation and democratic challenges in Norway. Øverland (2002b) p7.
- ⁹⁹ Øverland (2002a) p220.
- ¹⁰⁰ Øverland (2002a) p217.
- ¹⁰¹ Øverland (2002a) p217.
- ¹⁰² Øverland (2002a) p217.
- ¹⁰³ Øverland (2002a) p217.
- ¹⁰⁴ Øverland (2002b) p14.
- ¹⁰⁵ Øverland (2002a) p26-28.
- ¹⁰⁶ Henley Centre (2001a).
- ¹⁰⁷ Øverland (2002a) p43.
- ¹⁰⁸ Øverland (2002a) p32.
- ¹⁰⁹ Øverland (2002a) p31.
- ¹¹⁰ Øverland (2002a) p218.
- ¹¹¹ Øverland (2002a) p219.
- ¹¹² Øverland (2002b) p21.
- ¹¹³ Øverland (2002b) p21.
- ¹¹⁴ Øverland (2002a) p20.
- ¹¹⁵ History of the OECD, accessed online Jun 2004, at: http://www.oecd.org/document/63/0,2340,en_2649_201185_1876671_1_1_1_1,00.html
- ¹¹⁶ OECD-IFP website.
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- ¹¹⁸ OECD-IFP Biographies: http://www.oecd.org/document/37/0,2340,en_2649_33707_2070309_1_1_1_1,00.html
- ¹¹⁹ OECD-IFP website.

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- ¹²⁰ OECD-IFP website.
- ¹²¹ OECD-IFP website.
- ¹²² The database is online here: http://www.oecd.org/department/0,2688,en_2649_34213_1_1_1_1_1_1.00.html
- ¹²³ OECD-IFP website
- ¹²⁴ Øverland (2002a) p24.
- ¹²⁵ Slaughter (1999) p195.
- ¹²⁶ Delaney (2004).
- ¹²⁷ Delaney (2004).
- ¹²⁸ BCA's 'Aspire Australia 2025,' accessed online June 2004, at: <http://www.bca.com.au/content.asp?newsid=94443>
ACA's 'Vision 20/20,' accessed online June 2004, at: http://www.aca.gov.au/aca_home/about_aca/futures_panel/
CSIRO's 'Resources Futures,' accessed online June 2004, at: http://www.cse.csiro.au/research/Program5/national_futures.htm
- ¹²⁹ Naismith (2003) p2.
- ¹³⁰ Ramos (2004).
- ¹³¹ Delaney (2004).
- ¹³² Delaney (2004).
- ¹³³ APS Futures Forum website.
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- ¹³⁶ Reviews of ASTEC work Tegart, 2000, Martin and Irvine, Millenium Project
- ¹³⁷ Australian Nuclear Science and Technology Organisation Submission, 2003, p6.
- ¹³⁸ Martin and Irvine, 1989, p 200.
- ¹³⁹ Smith and Halliwell, page 47
- ¹⁴⁰ ?? ASTEC quote
- ¹⁴¹ Millennium Project, <http://www.acunu.org/millennium/applic-ch1.html>
- ¹⁴² James, 2001
- ¹⁴³ Slaughter, 1999
- ¹⁴⁴ Slaughter, 1999, page 175
- ¹⁴⁵ Slaughter, 1999, page 174.
- ¹⁴⁶ James, 2001
- ¹⁴⁷ James, 2001, page 13.
- ¹⁴⁸ Ramos, 2004, page 37.
- ¹⁴⁹ Loveridge et al, 2001 page 7
- ¹⁵⁰ Ramos, 2004, page 27
- ¹⁵¹ Martin and Irvine, 1989, p 336

Appendix 1: Scan of Government Foresight Projects, Past and Current

Country/Region	Government/Related Organisation	Focus	Notes
Australia	ASTEC – Australian Science and Technology Council www.dest.gov.au/science/archive.htm	Science and Technology	Panel/Scenarios based. Extensive consultation.
	Commission for the Future		
	CSIRO http://www.cse.csiro.au/research/Program5/index.htm	Resource Futures	Future Dilemmas: Options to 2050 for Australia's Population, Technology, Resources and Environment. Aim was to develop and test future options for use and management of Australia's environmental resource sectors at regional and continental scales and for medium and long term planning timeframes.
Austria	Federal Ministry for Education, Science and Culture Institute of Technology Assessment Austrian Academy of Sciences www.oeaw.ac.at/ita/eben4/d2-2e04.htm www.bmbwk.gv.at/start.asp?bereich=5&OID=4227&I1=591&I2=595&I3=595	Science and Technology	Delphi - claims innovative delphi techniques by combining technology and social delphi.
Belgium	Office for Scientific, Technical and Cultural Affairs www.socioforesight.net	Federal Science policy	Delphi, focus groups, aiming to produce 'one summarising and coherent report'.
Bulgaria/Romania	Bulgarian Applied Research and Communications Fund coordinates Foretech project (sponsored by STRATA Program, DG Research of European Commission) http://foretech.online.by	Information and communication technologies, agriculture food and drinks, biotechnology egovernment	Panel based. Developing 'formalised form' of foresight as a viable policy tool. Networking with other countries; government.
Canada	National Research Council http://agora.scitech.gc.ca/ev.php?URL_ID=1468&URL_DO=DO_TOPIC&URL_SECTION=201&reload=1069837489	Technology	Project is "exploratory and independent of any ongoing or regular funding process for science and technology research". Focus on geostrategic and biosystematics. Involves 13 government departments over 6 month period. Used scenarios.
China	www.foresight.org.ch	Technology	Delphi approach. Aims to develop framework for China's economic development.

Country/Region	Government/Related Organisation	Focus	Notes
Cyprus	eFORESEE Agricultural Research Institute www.eforesee.info	Science and Technology	Focus on European Union 'candidate countries'. Cyprus focus on agriculture, environmental management biotechnology.
Czech Republic	Ministry of Education, Youth and Sports Technology Centre of the Academy of Sciences www.foresight.cz	Science and Technology	Panels, National Research Project.
Denmark	Danish Board of Technology Ministry of Science, Technology and Innovation www.teknobgiskfremsyn.dn	Technology	Feasibility Study, Scenarios, FutureSearch workshops
Estonia	eFORESEE Institute for Baltic Studies www.eforesee.info	Science and Technology Information Soc. Technologies	Focus on European Union 'candidate countries'. Estonia focus on information society, biotechnology.
Europe	European Parliamentary Technology Assessment http://www.eptanetwork.org/EPTA/	Science and Technology	Network of groups doing science and technology assessments to advise European parliaments.
	Joint Research Centre, European Commission www.jrc.cec.eu.int/ Institute for Prospective Technological Studies www.jrc.es/home/index.html	Technology Competitiveness Employment	<p>IPTS Futures Project www.futures.jrc.es</p> <p>Futures EU25 – provision of strategic intelligence for science and technology driven policy development, especially research and technological development policy.</p> <p>Established SPIN – Strategic Prospective Intelligence Network – practitioners - aim to assist in enhancing performance and policy impact of European foresight.</p> <p>Foresight Competence Mapping – mapping of foresight activities across European Union, including competencies of individuals and organisations actively engaged in organising and managing foresight activities at national, regional, local and sectoral levels.</p>

Country/Region	Government/Related Organisation	Focus	Notes
Europe (contd)	Research Directorate-General, European Commission http://europa.eu.int/comm/dgs/research/index_en.html Science and Technology Unit (Directorate K) http://www.cordis.lu/foresight/home.html		Unit established to promote foresight cooperation in Europe.
Finland	Finish Parliament, Parliamentary Committee for the Future www.eduskunta.fi/efakta/vk/tuv/tuvm0198.htm Ministry of Trade and Industry Division for Research and Foresight Studies	Technology	Panel based.
France	Ministry of Economy, Finance and Industry http://www.industrie.gouv.fr/agora/pdf/000352.pdf	Future Technologies to 2005	Identify critical future technologies and assess France's relative strength in each area.
Germany	FUTUR – Ministry of Education and Research (BMBF) Federal Ministry of Education and Research www.futur.de/eng/	Science & Technology: strategic research funding policies of Ministry Future Research Policy	Exploring relevant future topics “in order to lead a comfortable life in 20 years. Participative dialogue process, producing lead visions to show the way into the future for upcoming research policy”. Delphi surveys 1993 – 1998; scenario work 2001 onwards; development of ‘lead visions’, future groups, workshops, focus groups.
Greece	www.foresight-gsrt.gr ministry of Development General Secretariat for Science and Technology	Science and Technology	Scenarios, working groups and sectors.
Hungary	Ministry of Education Hungarian Technology Foresight Programme www.om.hu/j2tepuj.html	Human Resources Life Sciences	Delphi approach. Focus on socio-economic needs.
India	Technology Information, Forecasting and Assessment Council (TIFAC) and the Confederation of Indian Industries (CII)	Technology	Technology Vision 2020, a forecast for technology. Use scenarios.

Country/Region	Government/Related Organisation	Focus	Notes
Ireland	Irish Council for Science, Technology and Innovation http://www.forfas.ie/icsti/statements/tforesight/matman/csit.htm Department of Enterprise, Trade and Employment	Technology	ICT Panel Report
Israel	Ministry of Science www.ictaf.tav.ac.uk/scitech_foresight.pdf	Science and Technology	Delphi approach. Identify science and technology fields significant for Israel's future.
ISNAR	ISNAR - one of the 16 Future Harvest Centers supported by the Consultative Group on International Agricultural Research - Learning for Institutional Innovation program http://www.isnar.cgiar.org/shiip/cuba-capacity.htm	Agriculture	Case studies.
Italy	Ministry for Education, Universities and Research Fondazione Rosselli www.foresight.it	Technology	Panels. National Priorities for Research and Science.
	ITEC Technology Group	IT, Electronics and communications	
Japan	Science and Technology Foresight Centre www.nistep.org	Technology	Delphi (7 th exercise), with 4448 participants. 8 th exercise underway. Well established; producing regular trend reports.
Malta	eFORESEE Malta Council for Science and Technology www.eforesee.info	Technology	Nanotechnology, environment, biotechnology, tourism. 'introduce and promote a national foresight culture' Projects, conferences
Netherlands	National Council for Agricultural Research Advisory Council for Science and Technology Policy www.agro.nl/nrlo/english/nrint2pg.shtml	Agribusiness Futures	Rural areas, fishing, science and technology Essay, Interviews, Expert Studies, Strategic Conferences, Action Conference, Foresight Report
New Zealand	Ministry of Research, Science and Technology www.morst.govt.nz	Science and Technology	Provide directions for science funding. No longer active in Ministry. Large project, extensive reach into country via sector approach, range of publications, evaluations. Also i3Challenge, a project about strategic directions for RS&T for 2003-2005.

Country/Region	Government/Related Organisation	Focus	Notes
Nigeria	Committee established by Head of State www.vision2010.org	Science and Technology (primarily)	Vision 2020: blueprint for Nigeria's progress. National Council to Nigerian Vision. Aim to "stimulate economic growth and transform Nigerians into patriotic citizens".
Norway	Ministry of Modernisation (previously) Labour and Government Administration http://odin.dep.no/mod/engelsk/index-b-n-a.html	Norway 2030	Globalisation, economic adaptability, values, culture and social cohesion, organisation of society and democratic challenges. Scenario Planning approach.
OECD	OECD www.oecd.org		Range of reports and reviews.
Peru	National Council of Science and Technology www.concytec.gob.pe	Technology and business related areas	Dephi, scenario planning. Informing science and technology policy.
Philippines	Department of Science and Technology www.dost.gov.ph	Science and Technology	Science and Technology Master Plan 1996. Modernising the production sector; upgrading research and development capabilities.
Poland	Ministry of Scientific Research and Information Technology, National Foresight Office, Committee for Future Studies	Health, Technology, IT, Social	Labour demand foresight, regional focus as well as national foresight, national foresight steering committee, 5 year project
Portugal	Directorate General on Employment and Vocational Training/Ministry of Labour and Solidarity http://in3.dem.ist.utl.pt/et2000	Information Society, Employment	Delphi approach. Engineering and Technology 2000, Engineering and Technology Foresight for Portugal 2000-2020.
	Ministry of Labour and Solidarity	Fisheries	Delphi approach.
	Non-government network (ET2000)	Industry	Sector groups, thematic groups.
	WORTIS, Ministry of Science and Technology, Foundation for Science and Technology	Automotive industries	Delphi approach.
Scotland	Scottish Foresight	Science and Technology	Government forum; linked with UK Foresight Project.
Singapore	Strategic Policy Office, Public Service Division, Prime Minister's Office www.app.spo.gov.sg	Future of Singapore	Scenarios – 3 exercises in 1997, 1997 and scenarios to 2025.
Slovakia	www.foresight.sva.sk	Technology	Raise quality of decision making – identify main development fields.

Country/Region	Government/Related Organisation	Focus	Notes
Spain	Spanish Ministry of Science and Technology Observatoria de Prospectiva Trcnologica Industrial (OPTI) www.opti.org	Science and Technology	First Spanish Foresight Programme. Monitor trends and needs of industry. Used delphi, panels and scenarios.
South Africa	Department of Science and Technology http://www.dst.gov.za/reports/foresight_reports.htm	Science and Technology	Aim to identify sector specific technologies to improve the quality of life; and impact on social issues and wealth creation. Range of foresight reports from sectors available on website.
South Korea	Science and Technology Policy Institute Ministry of Science and Technology	Technology	Delphi approach; aim to move forward in selected areas.
Sweden	Swedish Government, Swedish Foundation for Strategic Research Swedish Technology Foresight 1998-2003 http://www.tekniskframsyn.nu/old.eng/index.html	Technology	Interplay between technology, economics and social processes. Identify futures areas of high expertise and skills/foster future oriented work in companies and organisations/insights on future technological developments.
Switzerland	Future	Long term development of markets, economic sectors and industries	Scenario Planning Regional, national and international levels
Thailand	APEC Centre for Technology Foresight (National Science and Technology Development Agency)	Science and Technology Agriculture, SME Education	Delphi, scenario planning National and sector foresight projects Some organisation projects Evaluation overviews
Turkey	Scientific and Research Council of Turkey www.tubitak.gov.tk/english	Science and Technology	Vision 2030 – develop strategic technology and priority areas for research and development and formulate policies. Delphi, panels.

Country/Region	Government/Related Organisation	Focus	Notes
Ukraine	Projects sponsored by British Council http://www.britishcouncil.org/ukraine/ukraine-science/ukraine-science-foresight.htm	Technology Foresight	Technology Vision 2020 for Ukraine Institutional capacity building for technology management and innovation in Ukraine Investment Promotion Programme for Ukraine
UNIDO	United Nations Industrial Development Organization http://www.unido.org/doc/5216 www.foresight.ics.trieste.it	Technology	Projects in Latin America (Chile, Columbia, Ecuador, Peru) Central and Eastern Europe and Newly Independent States and Global Technology Foresight Initiative.
United Kingdom	UK: Cabinet Office – PIU/Strategy Unit – Strategic Futures		Work undertaken to bring futures thinking into policy work in government. Futures specific projects no longer current, but extensive research publications available on website.
	Department of Trade and Industry, Office of Science and Technology Foresight Project www.foresight.gov.uk	Science Technology	Extensive website; three stages; evaluations.
USA	National Science Foundation National Critical Technologies, 1993, 1995 (managed by RAND) www.rand.org	Science and Technology	
	Emerging Technologies 1996 George Washington University Foresight of Technology and Strategy www.gwforecast.gwu.edu/index.asp	Science and Technology	Virtual think-tank; conducts work electronically

Country/Region	Government/Related Organisation	Focus	Notes
	Brookings Institute, USA www.brook.edu	Government Foresight	The Brookings Institution is an independent, nonpartisan organization devoted to research, analysis, education, and publication focused on public policy issues in the areas of economics, foreign policy, and governance. The goal of Brookings activities is to improve the performance of American institutions and the quality of public policy by using social science to analyze emerging issues and to offer practical approaches to those issues in language aimed at the general public. Runs seminars.
	www.ostp.gov	Science and Technology	Panels.
USA (contd)	Millennium Project American Council for the United Nations University www.acnu.org/millennium a global participatory futures research think tank of futurists, scholars, business planners, and policy makers who work for international organizations, governments, corporations, NGOs, and universities The purpose of the Millennium Project is to be an international utility to assist in organizing futures research by continuously updating and improving humanity's thinking about the future and making that thinking available for feedback as a geographically and institutionally dispersed think tank		Applications of Futures Research to Policy project.

Country/Region	Government/Related Organisation	Focus	Notes
	National Academy of Public Administration (USA) http://www.napawash.org/resources/news/news_10_10_99.html	Environment	Bring foresight into research planning process (internally) at Environmental Protection Agency
	Woodrow Wilson International Centre for Scholars Government Foresight Program www.wwics.si.edu	Government Foresight	Web resource for foresight in government http://wwics.si.edu/subsites/lookingforward/index.htm - consolidation of information about relevant foresight and futures projects. Has four areas of focus: governance, strategic studies, dialogues on the future (media), and outreach/networks.

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