Disturbing the Present:
Practical Options to Inform National Security Planning in Australia through Horizon Scanning

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COME THE REVOLUTION[1]

'The purpose of looking at the future is to disturb the present'

Gaston Berger[2]

Berger's oft-quoted view of futures studies has an emotive, almost revolutionary undertone and two important meanings. The first meaning is a caution: futures studies should only be undertaken if they inform something being done today. Resources are always scarce and nobody wants to do anything for the fun of it. The second is direct and normative, stating that futures studies should disrupt complacency and lead to change. If we accept that purpose is needed in futures studies and that certain types of change constitute a desirable outcome, then a futures technique known as horizon scanning can provide the raw materials with which to disturb the present.[3]

This paper demonstrates that horizon scanning is a purposeful, disciplined, and interpretive way to search for emerging issues of relevance to an organisation's most fundamental objectives. The paper also shows that horizon scanning can play a role at the start of nearly every strategic planning process because it is a systematic, transparent and repeatable way of analysing an organisation's future and—by extension—its current operating environment.

After explaining the characteristics of horizon scanning, this paper will describe a typical horizon-scanning process, and introduce and categorise some international horizon scanning projects. This categorisation will be used to recommend two high-level options for scanning project methods that Australia's national security community could apply. Some assumptions about this need, and analysis of the strengths and weaknesses of the options to conduct a scanning activity, are provided in the final section.

The two key findings of this paper can be put simply. First, horizon scanning is a valuable and worthwhile addition to the Australian government's existing policymaking methods. The key value lies in how directed scanning of the internal and external environments related to

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1 This paper was commissioned by the National Security College in July 2013. It builds on an earlier work that examined organisational options for conducting horizon scanning within Australia's national security planning system. See David Connery, 'Horizon Scanning: Bringing Strategic Insight to National Security Policymaking', National Security College Working Paper No 1, 6 December 2012, available: http://nsc.anu.edu.au/documents/working-paper-1-connery.pdf, accessed 17 July 2013.

2 A quote widely attributed to this French industrialist and futurist, recently used in *The Observer*, 'We must meet the needs of an ageing country', online edition, 17 March 2013, available: http://www.guardian.co.uk/commentisfree/2013/mar/17/britain-ageing-population-needs-a-good-plan, accessed 17 July 2013.

3 Horizon scanning is also known as 'environmental scanning' by some practitioners. As there is no fundamental difference between these two techniques, this paper will use the term 'horizon scanning' throughout.

Australia's security could complement the already significant analytical effort conducted by intelligence and policy agencies. This effort could also usefully include other elements of the national security community, such as industry, the not-for-profit sector, and academia in a more structured and purposeful way. The second finding is that the existing—albeit assumed—future-oriented analysis across government need not be junked and replaced by a new effort. This paper will identify how a 'scan of scans' approach would suit the Australian government's desire to conduct 'strong horizon scanning',[4] and provide an effective stimulant for future planning activities.

HORIZON SCANNING TO INFORM DECISION-MAKERS

All large enterprises—public, private and not-for-profit—undertake strategic planning. This work identifies the ways resources will be applied to achieve an organisation's most significant goals: goals that define its fundamental purpose. These plans communicate, direct and often describe what an organisation regards as success. They aim to promote organisational growth, or at last sustainability, in the years ahead. In other words, strategic planning sets an organisation on a path for an encounter with the future.[5]

Of course, there are many ways to follow that path. The United Kingdom Government's Strategy Unit suggests a linear path: this begins with setting the task and the authority; it then moves sequentially from research and analysis to setting the strategic direction, before moving on to the design of policy and delivery plans.[6] Others suggest a parallel processes. For example, American academic Terry Deibel provides a holistic model of strategy development that starts with an analysis of the international and domestic environment. From that point the model moves directly to assumptions about how the 'real world' works.[7] Deibel's model then requires the analyst to identify threats and opportunities for 'national interests', while concurrently assessing the nation's power to achieve its objectives. From this parallel analysis, a plan of action is developed to protect or promote national interests.[8] This process is deductive, and relies upon a balance of ends, ways and means to ensure the nation can survive in a competitive environment.[9]

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4 Australian Government, *Strong and Secure: A Strategy for Australia's National Security*, Department of the Prime Minister and Cabinet, Canberra, 2013, p. 34.

5 Maree Conway, 'Strategic Thinking Webinar', 2013, available http://thinkingfutures.net, accessed 18 July 2013.

6 Prime Minister's Strategy Unit, *Strategy Survival Guide* (V2.1), available: http://webarchive.nationalarchives.gov.uk/20070701080507/cabinetoffice.gov.uk/strategy, accessed 10 July 2013.

7 Terry Diebel, *Foreign Affairs Strategy: Logic for American Statecraft*, Cambridge University Press, Cambridge, 2007, xii; Chapter 2.

8 *Ibid*.

9 For an explanation of the ends-ways-means construct, see Harry R. Yarger, 'Toward a Theory of Strategy: Art Lykke and the Army War College Strategy Model', in J. B. Bartholomees Jr (ed), *The US Army War College Guide to Strategy*, Vol 1, 2010, Chapter 3, available: http://www.strategicstudiesinstitute.army.mil/pdffiles/PUB1004.pdf, accessed 17 July 2013.

here is also an enormous array of literature describing how businesses can approach their future. This typically includes humble tools such as 'SWOT' analysis, whereby planers examine the internal and external environments for opportunities and threats affecting their industry. More sophisticated conceptual tools also exist, such as Porter's Five Forces and key factors analysis;[10] and far more complex methods that might employ financial or quantitative data to plan major investment decisions. Across all organisations there is an enduring faith in the benefits of planning for the future.

However, other authors suggest that people within organisations need to think as well as plan. A 2010 parliamentary inquiry in the United Kingdom found that government had 'all but lost the capacity to think strategically.'[11] Similar concerns were echoed in a 2010 review of Australia's Public Service (APS): 'there is a perceived lack of strategy and innovation across the APS. Employees do not feel equipped to develop strategic policy and delivery advice.'[12] The APS review also pointed to a lack of time given to 'focusing on emerging issues and producing forward looking policy analysis', as this time was consumed by the day's current issues.[13] If these positions are accurate, then the ability for an organisation to develop strategy—or strategic plan—is surely is doubt.

A need common to both strategic planning and thinking is an initial means of analysing how the strategic environment is changing, and interpreting its implications for the organisation. Such an approach might try to identify new trends that describe the possible trajectory of change, assess the impact of new technologies, or anticipate major events that could disrupt the current patterns of an organisation's environment. Not only would it aim to prepare an organisation for the future: it might also enable planners to shape the trajectory of desirable or undesirable change by taking action in the present or very near future. Different tools and methods exist to analyse what a future might look like for an organisation, and these are sketched in Box 1. This paper will focus on one: the broad method known as horizon scanning.

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10 See Robert M. Grant, *Contemporary Strategy Analysis*, 3rd edition, Blackwell, Malden USA, 1998, p. 78.

11 House of Commons Public Administration Select Committee, 'Who Does UK National Strategy?' The Stationery Office Limited, House of Commons London, 2012, p. 3.

12 Advisory Group on the Reform of Australian Government Administration, *Ahead of the Game: Blueprint for the Reform of Australian Government Administration*, Commonwealth of Australia, Canberra, 2010, p. 41.

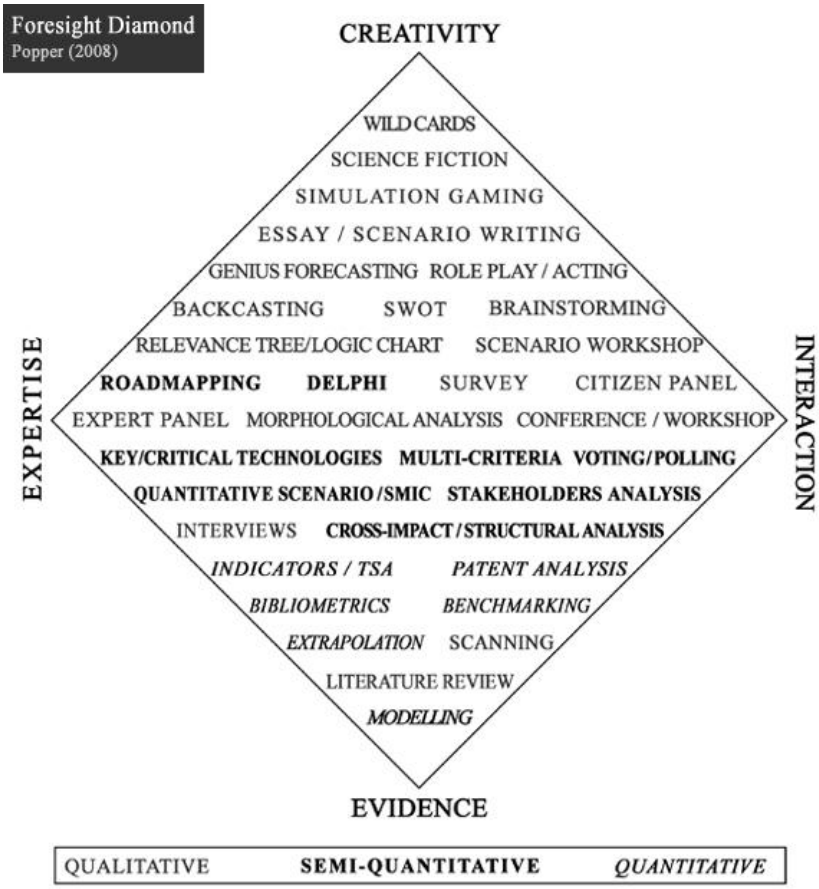
13 *Ibid*.

BOX 1: DIFFERENT FUTURES APPROACHES

Raphael Popper's foresight diamond shows the large variety of methods that could be used to examine an organisation's future.[14] The method under examination in this paper—(horizon) scanning—is shown in the bottom right-hand sector of the diamond, which emphasises its connection to evidence and interaction. This diagram also shows that horizon scanning is a close relative of literature reviewing.

At the top of the diamond, in the area that stresses creativity, are other commonly used foresight techniques. Perhaps the best known of these is scenario writing. In this technique, participants are invited to produce coherent and varied stories about the future world. These scenarios can be used to free the imagination, identify implications for an organisation, and even stress-test a proposed strategy.

Yet scenario writers need a basis of information to inspire their stories, and the best evidence will be based on rigorous analysis. This is where horizon scanning is crucialj, because it can provide insights into trends, events, drivers, and wildcards that can help to shape the scenarios.



[14] 'Dr Popper's Foresight Blog'; available: <http://rafaelpopper.wordpress.com/foresight-diamond/>, accessed 21 July 2013.

Characteristics of horizon scanning

Organic activities such as horizon scanning are difficult to define, as Box 2 shows. However, it is possible to isolate four characteristics that describe horizon scanning and make it distinct from other futures methods. The first is that horizon scanning is about searching. When scanning, participants are looking for drivers of change through repeated, systematic observation.[15] While scanning might start with a hunch concerning anticipated change, it is not about making predictions.[16] The task of scanning is completed when a new event, weak signal, trend, or driver is identified and analysed in the context of the scanning objective (see box 2).

Scanning is also purposeful. Effective scanning is not conducted in an attempt to ascertain everything about the future—that would be absurd. Scanning is undertaken with a specific set of goals in mind. One broad goal could be to alert an organisation to change, as an early warning radar might do.[17] When used to this end, the scan can reveal new and possibly controversial issues in non-threatening ways and increase receptiveness to change.[18] Another purpose might be to create new knowledge. This could involve identifying new data, or consolidating tacit knowledge from different parts of an organisation. It may result in a process described as sense-making, whereby shared knowledge is synthesised and shaped into shared views about the emerging landscape.[19]

Whichever goal is pursued, horizon scanning is most likely going to be used to support other work. One such use—strategic planning—was explored earlier. As a later section of this paper will explain, it is also possible to use scanning products to provide space for decision-makers to discuss the future; to engage stakeholders including the public regarding major challenges; to conduct other futures activities such as scenario development or gaming;[20] or even to set future research agendas.[21]

Thirdly, horizon scanning replaces anecdotal, scattergun tactics with coherent, disciplined methodology. Most executives search for new ideas every day in the media and trade

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15 Victor Van Rij, 'Joint horizon scanning: identifying common strategic choices and questions for knowledge', *Science and Public Policy*, 39(1), February 2010, p. 13.

16 Michael Jackson, 'Practical Foresight Guide Chapter 4 – Scanning', *Shaping Tomorrow*, 2011, p. 6; available: http://www.shapingtomorrow.com, accessed 12 December 2012.

17 See Jackson, 'Practical Foresight Guide', p. 3.

18 The Futures Company, 'Understanding Best Practice in Strategic Futures work', pp. 10 and 17, available: http://thefuturescompany.com/free-thinking/strategic-futures/, accessed 21 July 2013; and UK Department for Environment, Food and Rural Affairs (Defra), 'Looking back at looking forwards', c.2007, available: http://horizonscanning.defra.gov.uk, accessed 21 July 2013.

19 See Toti Könnölä et. al., 'Facing the Future: scanning, synthesizing and sense-making in horizon scanning', *Science and Public Policy* 39 (2012), pp. 223–5; and The Futures Company, 'Understanding Best Practice', p. 16.

20 See Fore*sight:* Horizon Scanning Centre, 'The Tools', http:// hsctoolkit.bis.gov.uk/Scenarios.html; 'Scenarios', http://hsctoolkit.bis.gov.uk/Gaming.html.

21 For an example where horizon scanning was used to inform a research agenda, see Van Rij, 'Joint Horizon Scanning', p. 14.

journals, at conferences and meetings. They will draw different conclusions about the way their environment is changing, and probably identify some changes that matter to them. But that search is unlikely to be comprehensive, and busy executives rarely have the time to develop observations into full conclusions. Worse still, some might fall prey to a recency bias that inflates the significance of a new tippet of information, or discounts information due to its source or lack of precedent. Horizon scanning disciplines the examination of the future by setting clear guidelines for relevance, encouraging the unusual and, importantly, helping people to know when to stop searching. Scanning will also bring increasing specialist skill and experience to the analysis,[22] which should help to discipline bias.

The final characteristic of horizon scanning is its interpretive nature. The act of scanning can result in significant numbers of observations regarding single events, and in reliable scans these will be catalogued and retrievable. The interpretation of these observations—whether to identify how they might combine as trends, be shaped into a narrative as an emerging issue,[23] or act as drivers of change—provide later activities such as scenario planning (see box 1) with important raw material.

In general, horizon scanning can provide the first substantive step in a strategic planning process. It does this in a structured manner that has regard for the purpose of an activity. It is also, due to the nature of the activity and its intent, a valuable way to promote strategic thinking within an organisation.[24] The ways of carrying out horizon scanning are varied, and subject to continual modification and refinement by practitioners who must juggle varying purposes, resources and organisational cultures. A typical way to conduct a scan is discussed next.

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22 Jackson, 'Practical Foresight Guide', p. 4.

23 Victor van Rij, 'New Emerging Issues and Wild Cards as Future Shakers and Shapers', in M. Gaioutzi and B. Sapio (eds), *Recent Developments in Foresight Methodologies*, Springer, New York, 2013, p. 86.

24 See Conway, 'Strategic Thinking Webinar' and Harry S. Yarger, *Strategy and the National Security Professiona*l, Praeger Security, Westport USA, 2008, p. 11–15. A recent report by a UK parliamentary committee cautioned against considering horizon scanning as a substitute for strategic thinking. See House of Commons Public Administration Select Committee, 'Strategic thinking in Government: without National Strategy, can viable Government strategy emerge?' The Stationery Office Limited, House of Commons London, 2012, pp. 27–8.

BOX 2: COMMONLY USED CONCEPTS IN HORIZON SCANNING

Horizon Scanning—some definitions.

Horizon scanning is a structured evidence-gathering process. It engages participants by asking them to consider broad sources, typically outside the scope of their expertise. This can be summarised as looking ahead, beyond usual timescales, and looking across, beyond usual sources. (*Source: UK Horizon Scanning Centre*)

Horizon Scanning is a structured and continuous activity aimed to 'monitor, analyse and position' (MAP) 'frontier issues' that are relevant for policy, research and strategic agendas. The types of issues mapped by HS include new/emerging: trends, policies, practices, stakeholders, services, products, technologies, behaviours, attitudes, 'surprises' (Wild Cards) and 'seeds of change' (Weak Signals). (*Source: Raphael Popper*)

The systematic examination of potential threats, opportunities, and likely future developments that are at the margins of current thinking and planning. Futures research may explore novel and unexpected issues, as well as persistent problems or trends. Overall, futures research is intended to improve the robustness of Defra's policies and evidence base. (*Source: Defra*)

Event. An event is something happening in the internal or external environment which can be observed and tracked, usually documented as a scanning 'hit'. (*Source: Conway, 'Environmental Scanning'*)

Emerging issue. A fact-based story line that is developed around an event and which envisages a positive or negative development. Emerging issues are often connected to contemporary issues and concerns. (*Source: van Rij, 2013*)

Trend. A trend is a grouping of similar or related events (or emerging issues) that tends to move in a given direction, increasing or decreasing in strength or frequency of observation. It usually suggests a pattern of change in a particular area and can be influenced by historical data. (*Primary source: Conway, 'Environmental Scanning'*)

Driver. A driver (of change) is a force moving trends in a certain direction. They are broad in scope and long-term in nature (e.g. 'globalisation'). (*Source: Conway, 'Environmental Scanning'*)

Weak Signals. Weak Signals are past or current developments/issues with ambiguous interpretations of their origin, meaning and/or implications. They are unclear observables warning us about the probability of future events. (*source: iKnow*)

Wildcard. A wildcard describes an imagined event that could alter the progress of a trend. Wildcards are the low-probability, high impact and rapidly appearing events that have been popularised by Nassim Nicholas Tableb as 'Black Swans'.

Worldview. A worldview describes how a person sees the world and makes meaning of what he/she sees. Worldview will also influence what one does not see, or value, when scanning. (*Source: Conway, 'Environmental Scanning'*)

'STEEP' taxonomy: Social, Technological, Economic, Environmental, Political.

'PESTLE': Political, Economic, Social, Technological, Legal, Environmental.

CONDUCTING HORIZON SCANNING

Horizon scanning was described as 'organic' in the previous section because it is constantly growing and changing. For this reason it is difficult, and indeed counterproductive, to define a single method that can be employed for a scanning project. Indeed, the countless variety of starting conditions—especially in organisational culture, the technology and resources available, and the circumstances in which scanning work has already been conducted—means that the broad methodology should be adapted to the situation at hand. This methodology can be described in six related, sometimes overlapping, steps.

1. Obtain organisational commitment and make early choices

Most practitioners stress the importance of gaining senior level commitment to a scanning project.[25] This involves developing a project plan that defines the aim, the audience and the intended outcomes clearly. The plan might also suggest focus areas, although these may be developed iteratively as the plan reaches maturity or the point of approval. Other important matters to be decided at this stage include the timeframe for the scan, the people who should be involved, and the scanning strategy.

Scanning strategies vary. In 'bottom-up' approaches, where working-level participants lead the effort, the scanning logic and approach might be more exploratory and function as a prelude to a larger project.[26] Alternatively, where the project is driven from the very top of the organisation, the scan will tend to be led by key questions or focus areas that are of greatest interest to the senior executive.[27] Either way, the caution for those designing a scan for a government audience is to maintain a keen focus on policy needs: 'a futures project that doesn't come from a policy need and head towards a policy solution has limited value'—this is the advice from one UK agency that has played a lead in future-oriented planning for over a decade.[28] This author would go further: the value of any scan that is not aimed at policy is far less than limited.

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25 See Maree Conway, 'Environmental Scanning: What it is and how to do it', Thinking Futures, Melbourne, 2009, p. 9; and The Futures Company, 'Understanding Best Practice', p. 23. Slaughter identifies ministerial buy-in as a potential weakness for a scan (Richard A. Slaughter, 'Lessons from the Australian Commission for the Future: 1986–98', *Futures* 31(1), 1999.

26 Effie Amanatidou et. al., 'On concepts and methods in horizon scanning: Lessons from initiating policy dialogues on emerging issues', *Science and Public Policy* 39, 2012, pp. 210–11.

27 One major scan combined the two approaches. See Marius Butter, et. al., 'Scanning for early recognition of emerging issues; dealing with the unexpected', SESTI Consortium, European Commission, 2010, p. 13.

28 Defra, 'Looking Back', p. 8.

2. Establish the 'thinking infrastructure'

The aim of step 2 to is bring different ways of thinking into the scan. This step recognises how organisational culture and the individual worldviews of scanning participants are strengths *and* possible weaknesses of the scan.

Promoting new thinking is tough and this task requires attention. Some authors have suggested using a tool, such as integral futures, to encourage groups to consider information and events from internal, external, objective and subjective perspectives.[29] Also, other activities such as discussions about the sources of bias and the scanner's personal style can help teams to think differently about the future (see Box 3). Developing infrastructure within the methodology used should allow the scanning team to operate in an optimal manner, and indeed encourage its members to think about the future in innovative ways.

When constructing the thinking infrastructure, it is important to keep both the objectives of the scan and the culture of the organisation in mind. Some organisations might not see the value of deep philosophical explorations and may react negatively to the project if these are stressed. Encouraging free-thinking is vital to the scan, but so too is ensuring that participants are comfortable with a process that accommodates unsettling or unusual outcomes.

Most importantly, training and awareness building for the scanning project should also be undertaken.[30] Awareness building will help to inform the organisation and encourage participation—or, at least, discourage obstruction. Senior leaders should be an early focus, so that they are led to understand exactly what the scan can and cannot do. In effect, this training should help to turn them into 'smart buyers' of this product.[31] Team training should be delivered by those with scanning experience, and encompass briefings on the project and its methodology, the technical skills needed to participate, and hints regarding good scanning practice. Such training should also be designed to help the team 'storm, norm and form', and generate commitment to the project.

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29 Terry Collins and Andy Hines, 'The Evolution of Integral Futures: A Status Update', *World Future Review*, June–July 2010, pp. 5–6.

30 James L. Morrison, 'Environmental Scanning' n.d, p. 7, available: http://horizon.unc.edu/courses/papers/enviroscan, accessed 2 July 2012.

31 The author is grateful to Victor van Rij for this observation (email, 23 July 2013).

BOX 3: THINKING ABOUT THINKING

Creating a thinking infrastructure, like building a team, requires attention. This is important because people should be sufficiently self-aware to understand their biases, what they assume, how they process information, and how they assign validity to information. Leaders of horizon scanning projects have many options to pick from as they develop their thinking infrastructure.

	Internal	External
Individual	I Subjective	It Objective
Collective	We Intersubjective	Its Interobjective

Integral thinking. The basic idea of integral thinking is that topics should be examined through four 'irreducible' perspectives: collective and individual; and interior and exterior. When these perspectives are mapped onto a matrix, they provide four sets of experience that we use to interpret reality: the subjective set of one's interior world of values, beliefs and motivation; the objective set of things we can measure, test or observe (facts); the interobjective set of how one perceives the real world working; and the intersubjective set of what one understands as social shared meaning or culture. Utilising this thinking framework can help scanners to use different perspectives and to understand that there might be different layers of meaning in a 'hit' they are examining. It also provides a way to identify further implications and avoid reductionism. (see Collins and Hines 2010)

Understanding Bias. A scanning team should take the time to understand bias and its styles and sources. For a treatment of bias in decision-making, see Daniel Kahneman, *Thinking, Fast and Slow*, Penguin, London, 2011, Part II. For general lists of biases:

<http://www.sims.monash.edu.au/staff/darnott/biastax.pdf>, and <http://blogs.hbr.org/cs/2012/09/how_to_minimize_your_biases_ when.html> The lists are impressively, and unfortunately, long.

Personal Style. Helping team members to understand their personal approach to life and analysis might help to increase self-awareness. Michael Jackson ('Practical Foresight Guide') suggests a simple assessment where individuals are asked to rate themselves, in comparison to others, on a number of characteristics to identify their thinking style. (See <http://www.shapingtomorrow.com> – membership required)

3. Scan and record

The substance of the scan is built as the team reads, discusses and reviews new items of information and records each of these as a 'hit'. This step in a scan may involve automated searches using content-scanning software, and the raw results might be similarly sorted and presented. However, most scans are likely to rely upon smart, interested people reading all manner of literature and listening to new sources of ideas, and then manually recording their findings in a database. In many scans, hits will be analysed using an organising framework that covers different influences on the organisation's environment, including social, technological, cultural, economic, and political factors.[32]

Discipline is vital at this stage of the scan. The sources of information should be accurately recorded, their implications analysed, and the data entered so it can be easily searched.[33] Adding additional cross-referencing 'tags' to the hits, such as the quality of the source, the novelty or otherwise of the information, and even the degree of inspiration it provides can help scanners to identify important information later.[34]

4. Interpret patterns of change

Scanning teams will gather many hits, and produce a mass of evidence. As the quantity of evidence will be difficult for decision-makers to digest and use, it is necessary that the next stage involve interpretation of the data and identification of patterns of change. These patterns are usually classified as 'emerging issues', 'weak signals', 'trends' or 'drivers', depending on their relationship with each other (see box 2).

Communication is the key reason for identifying these patterns. Much in the same way that 'self-determination', 'globalisation' and 'democratisation' have been used over the years to describe major, multi-dimensional changes in society, scanners today should capture their sense of the major direction of change in a compelling way. This process is one of synthesis and sense-making, and it adds significant value to the scan because it will help the team develop narratives about the future.[35] Practitioners recommend regular team meetings and discussions so that members can speak about their individual findings, and engage in collective analysis of possible patterns.[36]

Some scanning projects use workshops at this stage of the process to consult and challenge the initial findings. This activity exposes the team's data and ideas to review by outsiders—generally, but not exclusively, subject matter experts. Typical activities in these workshops include assumption surfacing, issue clustering, trend development, and issue prioritisation.

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32 The framework should vary according to the subject area. Those in the national security space might add categories such as law enforcement, cyber, military and diplomacy to the normal technological, social and economic categories. Common formulations include 'STEEP' and 'PESTLE' (see Box 2).

33 Jackson, 'Practical Foresight Guide', p. 32; Conway, 'Environmental Scanning', p. 18.

34 Jackson, 'Practical foresight Guide', p. 33; and Wendy Schultz, 'The cultural contradictions of managing change: using horizon scanning in an evidence-based policy context', *Foresight* 8 (4) 2006, pp. 10–11.

35 Konnola et.al. p. 224

36 Conway, 'Environmental Scanning', p. 18.

In the latter task, surveys or voting may be conducted to rank issues.[37] While workshops can be costly, discussions with experts in various fields will increase the sophistication of the team's interpretation and enhance the project's overall credibility.[38]

Scan leaders must also develop a process to move from insight to analysis. There are a number of methods that could be used to assist here. Analysing the hits in different ways through 'STEEP' analysis, Delphi surveys, and 'trend' and 'driver' analysis can help teams to integrate their thinking and draw more implications from their work. Beyond that, some authors encourage thinking in different 'layers' to examine 'submerged' layers of meaning.[39] These and similar methods are described in Box 4.

[37] For example, see use of statistical analysis in Könnölä et. al., 'Facing the Future', pp. 226–7; and 'issue clustering' in van Rij, 'Joint horizon scanning', pp. 12–13.

[38] See Könnölä et. al., 'Facing the Future', p. 224; and Jon Day, 'Review of Cross-Government Horizon Scanning,' London, Cabinet Office, 2013, p. 1.

[39] Methods such as Causal Layered Analysis offer a comprehensive approach to this task. See Sohail Inayatullah, 'Causal Layered Analysis: Theory, historical context, and case studies' in Inayatullah (ed), *The Causal Layered Analysis (CLA) Reader: Theory and Case Studies of an Integrative and Transformative* Methodology, Tamkang University Press, Taipei, 2004, available: http://www.metafuture.org/, accessed: 17 July 2013.

BOX 4: INTERPRETING PATTERNS OF CHANGE

There are many techniques that scanning teams can use to bring 'hits' together to interpret patterns of change. These techniques might be used within the team or, as suggested by a number of practitioners, at a workshop with experts. These techniques aim to add richness and depth to the interpretation of the scanning data, not to bring scanning hits together into comprehensive and consistent stories about the future as a whole.

There are many variations on these methods (indeed, there are often major distinctions among methods with the same name). Importantly, the method must fit the project.

'STEEP'. In addition to categorising hits, a method such as 'STEEP' or 'PESTLE' can be used to help interpretation. This is an interactive tool which asks participants to group their hits under one of the category areas; it then uses the visualised layout to add further dimensions of analysis, usually by overlaying new insights upon old. Connections between the hits might be drawn. This activity can be conducted quickly, but also revisited over time. This technique should be reinforced by deeper analysis.

Delphi Survey. The task of assigning relevance and important to hits can be greatly assisted by consultation with experts. The Delphi Survey can be used to establish a consensus among experts without subjecting the process to the influence of dominant personalities. The process involves sending well-constructed questions or issues to the expert group, via email or web tool, and seeking quantitative responses and contextual information about the reasons for their responses. The responses are then collated and returned to the group, who are asked to comment on the results, usually by voting. This stage might be conducted electronically, or in a face-to-face workshop. The responses of this second round are circulated again and potentially in further rounds of voting, until the expert group achieves consensus regarding the original questions or issues.

Trend Extrapolation. Trend extrapolation adds value to the scanning team's raw work, and might build upon a 'STEEP' activity. In this interactive activity, participants consider past patterns of change and, using the horizon scan hits and possibly quantitative data, chart a future direction for a trend. Potential trends should be recorded and debated for relevance, impact and likelihood. New trends, and connections between trends, might be identified and similarly analysed. Potential events that could disrupt a trend should be noted ('wildcards'), and the driving forces that underlie the trend's trajectory or portend 'weak signals' should also be recorded. The products of this analysis can be applied to other futures methods, such as scenario analysis and other 'sense-making' activities.

Causal Layered Analysis. One method of identifying the deeper dimensions of events by moving from the surface explanations of events ('observed reality'), to the deeper constructions of that reality. By moving deeper, from structure through worldview to myth, participants gain a broader understanding of the world and the possibility of alternate futures. (see <http://www.metafuture.org>)

For more information, see < http://hsctoolkit.bis.gov.uk> and <http://forlearn.jrc.ec.europa.eu>. These sites also explain other techniques and include links to information about each technique.

5. Report insights

Those commissioning a scanning project will want to hear the team's findings; but they will be unable to deal with a mass of unstructured detail and will be impatient towards unstructured thinking based on that data. The final step involves presenting the scan findings in ways that others can use to inform their thinking and decisions.

Reporting styles can vary. Large documents comprehensively explaining the breadth of the identified findings might be used; typically, this is an outcome of a major project. Where horizon scanning is an ongoing task, a more frequent reporting schedule can be established. This would lend itself to issue-specific papers describing the scan's findings in particular fields, in-depth analysis of individual trends, or shorter multi-media briefings to project sponsors. Spot reports, which might act as alerts, could also be employed—although this has the potential to overlap with intelligence functions in the national security context.[40] A website—or even an old-fashioned newsletter—to present ideas and encourage feedback might also be used.[41]

The key advice provided by a number of authors regarding reporting is simple: keep focused on the client's need.[42] In a national security context, this should mean timely reporting that is aimed at influencing policy.

6. Project evaluation

The next step, evaluation, aims to identify whether the project has achieved its goals. Popper suggests twenty criteria for evaluating foresight programs such as HS, suggesting that there is a way to tailor evaluation to the aim, process and outcome chosen.[43]

Types of scanning projects

While most scans tend to follow a pattern similar to that described above, projects themselves might be grouped into two broad categories. These categories are based upon the initial input.

The first category of a scanning project can be described as a 'tailored' or *ab intitio* horizon scan. This type of scanning project generally commences with a blank slate, or close to one. While data will derive from many places, such a project generally assigns significant resources to collecting its own data set. This approach has been used in a number of major national security horizon scanning efforts, especially in the United Kingdom, United States, and Singapore.

In the cases of the 'Global Strategic Trends' outlined by the UK Ministry of Defence and the 'Global Trends' specified by the US Director of National Intelligence, horizon scanning has

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40 Van Rij, 'Joint horizon scanning', p. 17.

41 Morrison, 'Environmental Scanning', p. 12.

42 Van Rij, 'Joint horizon scanning', p. 17; Day, 'Cross-Government Horizon Scanning', p. 3.

43 Karl Popper, 'Evaluating Foresight', 2010, available: http://rafaelpopper.wordpress.com/evaluating-foresight/, accessed 18 July 2013.

been an important input to their scenario generation products.[44] Both projects have undergone numerous iterations and rely on literature reviews, workshops, and consultation to produce their final, publicly available reports. The two projects also rely heavily upon sophisticated data support. While the United Kingdom's 'Global Strategic Trends' is based on a database that allows cross-comparison between scanning hits,[45] the US version employs an open-source analytical tool called the International Futures Model to examine the effect of economic and social development on different nation-states.[46] Both projects use their data as an input to scenarios that describe possible worlds twenty to thirty years hence: but neither appears to have a direct relationship with a policy process.[47]

The Risk Assessment and Horizon Scanning Centre within the Singapore National Security Coordination Secretariat takes a different tack. Famously developed in response to 'strategic surprises',[48] the Singaporean scanning project (known as 'RAHS') provides government with an early warning function in a near-term time horizon of around 3–5 years. There is a strong emphasis on data modelling in this activity, particularly of social systems, and computer-generated visualisation tools. While explicitly linked to the Singaporean Government's strategic planning system, it has broad links across government and with the business and academic communities.[49]

Of course, many scanning projects have also been conducted for non-national security purposes. As one example, the Institute for Safety, Compensation and Recovery Research (ISCRR) in Melbourne conducted a scanning activity aimed at developing a research agenda for government agencies with interests in road safety.[50] Other scans will comprise broader agendas that aim to identify future trends that could influence policymakers. One example of this is the European Community project 'Facing the Future', which aimed to assess the policy challenges facing the European Union and distil these into a set of cross-

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44 US Director of National Intelligence, *Global Trends 2030: Alternative Worlds*, Washington, 2012, available http://www.dni.gov/index.php/about/organization/global-trends-2030; accessed 21 July 2013; and Development, Concepts and Doctrine Centre, *Global Strategic Trends out to 2040*, UK Ministry of Defence, Shrivenham, 2010, available: http://www.mod.uk/DefenceInternet/MicroSite/DCDC/, accessed 21 July 2013.

45 This author visited the UK's centre with responsibility for the Strategic Horizons Project in 2003 and conducted numbers discussions with the project manager.

46 See http://www.ifs.du.edu.

47 Indeed, the UK Cabinet Office conducted a separate horizon scanning project for its national security strategy of October 2010 and subsequent Strategic Defence Review (Day, 'Cross-Government Horizon Scanning,' Annex A).

48 Beat Habegger, 'Horizon Scanning in Government: Concept, Country Experiences, and Models for Switzerland', Centre for Security Studies, Zurich, 2009, pp. 17–19.

49 *Ibid.*; see alsohttp://app.rahs.gov.sg/public/www/home.aspx.

50 Scanning is widely used for this purpose. For example, see Scientific Committee on Antarctic Research, Future Directions in Antarctic Science' (2012), available http://www.scar.org/publications/occasionals/Antarctic_Science_Future.pdf, accessed 17 July 2013; and Ville Brummer, Toti Könnölä and Ahti Salo, 'Foresight within ERA-NETs: Experiences from the preparation of an international research program', Technological Forecasting and Social Change 75 (2008).

cutting challenges. This process was based on initial literature reviews, expert polling and synthesis, and a computer tool called 'Robust Portfolio Modeling' (RPM).[51]

A second category is based on collecting, analysing and synthesising the data of existing scanning projects for a new purpose. One example of this 'scan of scans' approach is the Sigma Scan, which is the flagship of the United Kingdom government's Horizon Scanning Centre.[52] This project now includes over 6000 papers and 300 interviews, and is publicly available and fully searchable. Each entry is formatted with analysis to explain its significance, the assessed implications, and the main drivers.[53] Sigma Scan has been used to support a number of in-depth analytical papers and projects, including HM Treasury's 2006 study, 'Long-Term Opportunities and Challenges for the UK', and 'Future of Asian Trade with the UK'.[54] The project's major sponsor, UK Chief Scientist Sir David King, testified that Sigma Scan 'enabled us to respond very quickly to Government horizon-scanning queries', which explains the value of having a structured, broad and ongoing process such as this for policymakers. [55]

A scan of scans is also an economical option to use where there is a significant amount of existing material available. One example was the 'Joint Horizon' project.[56] This project amalgamated scans from the United Kingdom, the Netherlands and Denmark in order to compare the basic findings of each, while simultaneously promoting international collaboration and methodology development. Even though the scans were developed for different purposes, 'Joint Horizon' observed a significant overlap in the issues considered by each. The comparison allowed the project to develop issue clusters, which identified a number of high-impact areas for future research.[57] It is clear to see how such a methodology could be used to bring together scans from different nations to obtain cultural, policy, and situational perspectives that differ from one's own.

Another example of this method was a project conducted for the UK Department of Environment, Food and Rural Affairs (Defra) by Talwar and Schultz.[58] This project aimed to use secondary sources—mainly other scans—to develop an evidence base for Defra for further futures studies projects. This data was used to identify a large number of trends,

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51 Könnölä, et.al., 'Facing the Future', pp. 225–8.

52 Habegger, 'Horizon Scanning in Government', p. 17; and Snelling, 'Tomorrow's World Today', p. 3.

53 See http://www.sigmascan.org/, accessed 20 July 2013. See also Habegger, 'Horizon Scanning in Government', pp. 13–17; and Mark Snelling, 'Tomorrow's world today: outsights on the challenges of horizon scanning', (n.d.), p. 5, available: http://www.outsights.co.uk, accessed 17 July 2013.

54 HM Treasury, 'Long-Term Opportunities and Challenges for the UK: Analysis for the 2007 Comprehensive Spending Review', 2006; and UK Trade and Investment, 'The Future of Asian Trade with the UK', 2006, p. 6, available: http://www.outsights.co.uk, accessed 21 July 2013. See also Snelling, 'Tomorrow's world today', p. 5.

55 House of Commons Public Administration Select Committee, 'Strategic thinking in Government', EV.47.

56 van Rij, 'Joint Horizon scanning', pp. 7–18.

57 *Ibid.,* pp. 9–11 and 15.

58 Rohit Talwar and Wendy Schultz, 'Baseline Scanning Project: Executive Summary', April 2005, available http://horizonscanning.defra.gov.uk/ViewDocument_Image.aspx?Doc_ID=194, accessed 17 July 2013.

driving forces, emerging issues and wild cards that were evaluated for their significance to the client agency. A total of 152 scans of similar works were used as inputs to this project, which demonstrates the large number of activities that are being examined globally.

These three examples highlight the value that a scan of scans approach could bring in terms of economy, collaboration, differing perspectives, and potentially time. It could be a very useful way to collate work from across a community with significant shared interests.

HORIZON SCANNING AND AUSTRALIA'S NATIONAL SECURITY COMMUNITY

Australia has embraced the idea of a 'national security community' ('the Community').[59] This concept captures the sense of collaboration required between those involved in national security, including the Commonwealth and State Governments, industry, academia, and relevant not-for-profit organisations. It captures the idea of a shared mission and the shared language, structures, and processes used in national security. So far, this paper has identified the value of horizon scanning and discussed different approaches for scanning projects. The aim of this section is examine how scanning could be used to meet the needs of the Community.

While it is difficult to determine the details of the Community's existing horizon scanning or similar activities, it is easy to assert that the basis of a significant scanning activity is well established in Australia's intelligence agencies. This assertion is based on the public acknowledgement of some cross-cutting analytical work, such as the 'all hazards national assessment',[60] and it can be assumed that the recent national security strategy was based on whole-of-government input regarding the future security environment to around 2018.[61] We know too that the intelligence work for these assessments is classified.

Still, it is possible to make three assumptions concerning the Australian government's current approach to dealing with the future. First, all departments and agencies would have undertaken some work which analyses the implications of intelligence assessments, and policy documents such as the Asian Century White Paper and national security strategy. Indeed, conducting robust programs of horizon scanning was considered as a key response to promoting community, infrastructure, and institutional resilience.[62] This means agencies are already engaged in thinking about the future of their external environment, so this is not

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59 See Prime Minister Kevin Rudd, MP, The First National Security Statement to the Australian Parliament, Commonwealth of Australia, Canberra, December 2008, pp. 30–2; and Australian Government, *Strong and Secure*, p. iv.

60 Alan Gyngell, 'National Security Lecture – The University of Canberra, 28 May 2010', pp. 8–9, available: http://www.ona.gov.au/about-ona/for-the-record/national-security-lecture-by-allan-gyngell.html, accessed 17 July 2013.

61 Australian Government, *Strong and Secure*, pp. 27–35.

62 Australian Government, *Strong and Secure*, p. 34.

an empty space. Much of this work, however, may not have been conducted systematically to consider a period beyond the five-year time horizon used for the national security strategy.

It would also be safe to assume that most agencies have conducted some analysis of their internal environment as well. If work has progressed on the Government's promised national security capability review,[63] then it is possible that an examination of the internal environment of Commonwealth Government national security agencies has also been undertaken. But we can also assume that such work has not been undertaken for or with other national security partners, including industry, academia and perhaps the State and Territory Governments: if it exists, such work would be public knowledge.

A third assumption is that there is no current, ongoing horizon scanning work that links the national security community. While a number of national security agencies participate in the Australasian Joint Agencies Scanning Network, this effort is a very 'bottom-up' activity that depends upon cross-government collaboration and very few resources.[64]

If these assumptions hold, then it is possible to claim that the national security community—and not just the Commonwealth Government—needs a horizon scanning program. Such a program would require unified consideration of both the internal and external environments facing the Community in a time-horizon of beyond five years, but not more than twenty years. This is especially important as the development of competent responses to new challenges in the cyber domain and at the borders—as well as to existing needs such as effective counter-terrorism capability and the capacity to conduct overseas stability operations—relies upon whole-of-nation collaboration. Also, the capability needed to meet such challenges can take more than five years to develop and make fully effective. Having a longer time perspective can allow scanners to consider some of the weaker signals of change and at least introduce these signals to decision-makers. A scanning activity would also promote links and build strategic thinking capability among different parts of the Community. Most pragmatically, a scan would ensure that future iterations of the national security strategy or other similar planning documents are served by thinking about the future that has matured and been analysed over time.

With these assumptions in mind, it worth asking which of the two broad scanning methods—a tailored, *ab initio* scan or a 'scan of scans'—would best suit the national security community's needs. There is much to recommend the tailored scan: it is focused, would be comprehensive, and can be driven from the top. However, this activity is likely to be expensive because it will require new resources to establish and sustain its infrastructure. It will also take time to produce significant results.

The recommended alternative for the community is to conduct a scan of scans in the first instance. Such an activity would build upon the significant information holdings of the

63 See Robert McClelland, 'Security in Government Conference 2011: Welcome and Opening Address', Commonwealth of Australia, Canberra, 2011, pp. 1–3, available: http://www.ag.gov.au, accessed 12 July 2012.

64 See *Australasian Joint Agencies Scanning Network,* http://ajasn.com.au.

national security community. This means that a scan of scans could likely be conducted reasonably quickly and thus cost-effectively. Including non-national security resources—scans conducted by industry and academia—would broaden the base of analysis available. And while some government reports would need to be changed for use in a forum involving the broader national security community, such change is likely to be manageable and minimal if the scan is looking five to twenty years into the future.

A suggested way to conduct the scan of scans on Australia's future security environment would be to bring a small team of policy, capability, economic, and intelligence experts together to review existing government and non-government scanning products. This team should be tasked to prepare a number of short trend papers covering the main existing challenges, and to push the boundaries with a select number of thought-pieces on possible new trends and wildcards. The team would use these inputs to conduct a Delphi survey that involves experts from across the community to rank the significant issues and provide their views on data gaps. This work could be consolidated through a workshop activity that seeks to validate or question the major trends, identify the key drivers of change, and develop wildcards that would challenge current thinking.

The resulting product would be a short stress test of the current national security strategy against potential trends, drivers, and wildcards that the collective effort has developed. This input could be used to scope the revision project for the national security strategy, which should begin within the next three years. Conducting this scan around 2014–15 would provide agencies with time to conduct research into any identified gaps.

Regardless of which project method might be used, it will be vital to involve senior decision-makers from the start. Ideally, this means a senior body such as the Secretaries Committee on National Security should be involved in commissioning the work.[65] The committee should be briefed on how the scan will operate, and it should allow time to hear some of the main conclusions. If nothing else, the scan should help to identify which, if any, policy areas require attention, and which might need further research.[66]

MAKE TIME TO SCAN

Horizon scanning can play a vital role in strategic planning processes and less-structured activities including capacity development for strategic thinking. This futures technique can play such roles because it provides a structured project method with which an organisation and its leaders can consider significant issues that sit beyond today's timeframes, and do so in a disciplined and productive way. Scanning projects also provide a contestable space in which organisations are able to speak about the future in a non-partisan way—after all, the

[65] See Australian National Audit Office, *Management of the Implementation of New Policy Initiatives*, Audit Report No.29 2010–11, Commonwealth of Australia, Canberra, 2011, Appendix 5.

[66] Structural options for conducting a horizon scan within Australia's national security community were presented in Connery, 'Horizon Scanning' (2012).

scan is not policy and such new thinking has not be considered by government. The act of scanning encourages participants to think beyond the crises of the day, argue their case regarding a particular hit, and synthesise their findings. This activity will contribute to developing strategic thinkers within an organisation, which heightens the value that could be obtained from this activity.

While there are many different ways to conduct horizon scanning, the recommended way forward for Australia's national security community is to commission a scan of scans project using information which already exists in the community. This type of project would make the best use of resources. It would also offer a solid starting point for future work to address any specific gaps in thinking about Australia's future security environment, and the needs of the agencies and partners that will remain responsible for addressing the resulting challenges. Such an activity would also be repeatable in time, and perhaps stimulate further scanning work within organisations. Should this prove successful but insufficient, it might be advisable to establish an ongoing scanning capability within Australia's national security community. Such an activity is perhaps more efficient in the longer term, and would provide an invaluable way to maintain the released—and proposed—plans that comprise Australia's national security policymaking framework.

More specifically, there are also numerous techniques available for conducting the analytical and interpretive phases of such a scan. Should the scan of scans approach be adopted, a thorough comparison of existing products could lead to a Delphi-style survey and a trend analysis activity. These methods would be well-placed to provide senior executives in the national security community with a clear understanding of both the possible direction of change, but also the gaps in existing thinking. These techniques could also help them to disturb the present in an effective way.

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