

DANIEL K. INOUE ASIA PACIFIC CENTER FOR SECURITY STUDIES

OCCASIONAL PAPER, OCTOBER 2018



Simplifying Complexity with Strategic Foresight and Scenario Planning

Deon Canyon PhD DBA MPH FACTM

Strategic foresight

The world is constantly evolving and changing, which often results in significant impacts on society and the crisis management community. Staying ahead of the curve requires not only an understanding of systems and complexity, but also creative and collaborative thinking and action. Proactive emergency management agencies have recognized the need to reflect on the challenges that will come with future crises and some, such as the US Federal Emergency Management Agency (FEMA), have conducted strategic foresight activities (FEMA 2012b). FEMA seeks to “understand how the world around us is changing, and how those changes may affect the future of emergency management.” They engaged the diverse emergency management community in a collective exploration of issues, trends, and other factors that could impact the future environment, and to support expanded strategic thinking and planning for the future.

Strategic foresight is a recent discipline, originating in the 1960s, that allows us to create functional views of alternative futures and possibilities. Through this process, organizations are better prepared for possible threats and are more prepared to take advantage of emerging opportunities. Rather than predicting or forecasting the future, foresight allows us to examine the external environment for trends and leverage those insights to create images of the emerging landscape. These well-informed maps of the future allow us to test our current strategy, develop breakthrough innovations, and create transformative change.

Strategic foresight encompasses various methods, processes and tools that assist decision makers to make sense of their complex problems with a view to guiding future-orientated decisions and planning (Vecchiato and Roveda 2010, Vecchiato 2012). Foresight is an umbrella term for innovative strategic planning, policy formulation and solution design methods that work with alternative futures rather than predicting or forecasting the future. Foresight is a systematic, participatory, future-intelligence-gathering and medium-to-long-term vision-building process aimed at enabling present-day decisions and mobilizing joint action (Miles et al 2016). It empowers decision makers and policy planners to use new ways of thinking about, talking about, and implementing strategic plans that are compatible with the unfolding future (UNDP 2018).

Scenario planning

Strategic foresight and its most common tool, scenario-based strategic planning, have been used successfully for decades in corporate planning. The most famous example is provided by the energy and petrochemical giant Royal Dutch Shell (Cardoso and Emes 2014). During the oil crisis of the late

1960s, Shell altered its strategy and successfully propelled itself to the top of the industry, a move accredited to the use of scenario planning. Today, organizations like Intel, Ford, and Disney have joined Shell in employing futurists to leverage foresight tools for organization-wide strategy development and innovation.

Foresight tools, such as scenario planning, facilitate future-orientated awareness that works by overcoming pre-existing biases, simplifying complexity, and reducing uncertainty with the aim of fostering faster and more effective decisions (Bootz 2010, Ringland 2010). Scenario planning has been used in corporate decision making processes since the late 1970's and has been found to help make sense of uncertain environments, overcome their cognitive limitations and improve mental agility (Vecchiato 2012). Scenario planning brings together decision makers with key stakeholders who generate insights through a workshop type process as they explore the development of alternative futures (Horton 1999). Military planners even used the method in World War II to develop a series of alternative futures in an attempt to make sense of potential enemy actions (Bradfield et al 2005).

Cognitive psychology proposes that humans possess codified knowledge based on processed information, and tacit knowledge based on unprocessed information (van der Heijden 1997, Brockmann and Anthony 2002). Codified knowledge has meaning while tacit knowledge has not had any meaning ascribed. Scaffolding is the process by which tacit knowledge becomes codified and is key to breaking down cognitive bias and understanding novel complex problems.

Scenario planning is a process used by organizations that wish to evaluate their readiness for the future by developing and examining the implications of a range of possible alternative futures. Scenarios are extrapolated from a detailed systematic analysis of the driving forces of change that an organization may face over the next 15 to 30 years. Strategic planning decisions are strengthened by going through the process of envisioning how current strategies and operating models would perform under different future scenarios. Crisis managers have found scenario planning a useful tool for managing uncertainty, risk, and opportunity because it provides a well-tested framework for understanding future needs and prioritizing near-term actions.

Scenario planning is a tool that places participants in a tacit knowledge environment, outside their present frame of reference, and requires them to create codified knowledge as they struggle to make sense of a new environment. This exercise enhances a person's ability to anticipate by overcoming cognitive biases and moving the new situational knowledge from tacit to codified (Bootz 2010). The process of challenging assumptions, frames of reference and knowledge sources further helps to overcome many natural cognitive limitations in decision makers.

The selection and application of different scenario planning processes depends on the main characteristics of an organization's business environment and on available expertise. Cardoso and Emes (2014) presented a framework that capture this selection process (Figure 1).

An intersection of the extremes of time and complexity creates the framework that guides strategy selection. Time refers to the timescale of key processes. Short-term endeavors may rely on forecasting, whereas foresight is more suitable for mid to long-duration projects. Complexity refers

to how easy or difficult it is to understand the relationships between an issue's driving forces and uncertainties. Issues with clear, visible cause-and-effect relationships are designated simple or low complexity, while high complexity issues are those in which the cause-and-effect between driving forces and uncertainties are not fully visible or well understood or known.

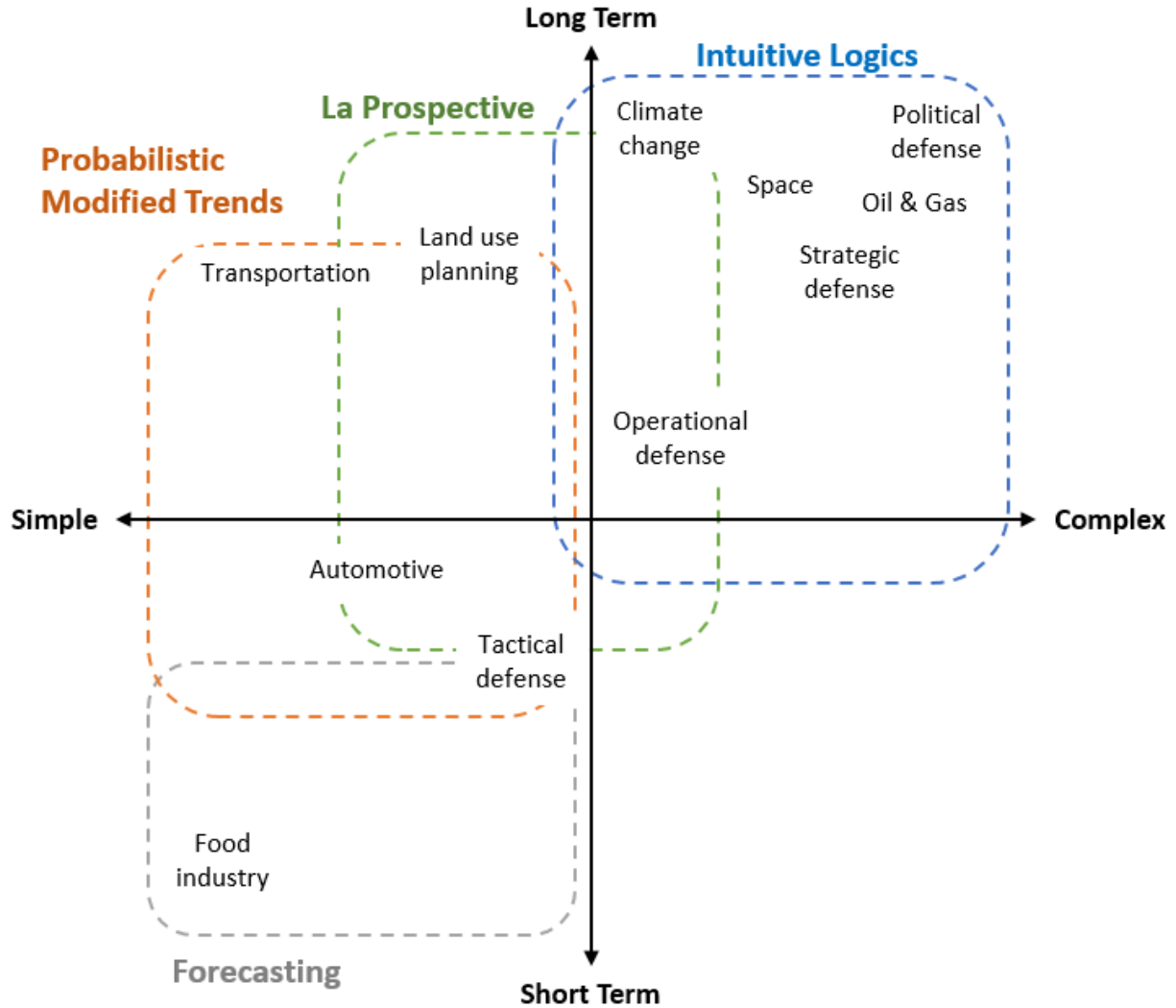


Figure 1: Framework for selection of scenario planning processes (Modified from Cardoso and Emes 2014).

Based on this approach, the most suitable techniques for operational, strategic and political defense fall under the category of Intuitive Logics. The Forecasting, Probabilistic Modified Trends and La Prospective approaches are mainly quantitative, analytical and probabilistic in nature. This renders them more suitable for clear risks and less appropriate for low probability, complex risks.

The previously mentioned Royal Dutch/Shell method is an excellent example of Intuitive Logics. This group of techniques is characterized by its subjective and qualitative nature and relies on disciplined intuition, brainstorming, stakeholder analysis and STEEPLES (Social and cultural,

Technology and science, Economic, Environment, Political, Legislative, Ethical and Security) analyses to understand the driving forces of change and how the issue of interest may evolve.

Key aspects of the Intuitive Logics approach as derived from Huss and Honton (1987), Schwartz (1996), Bradfield et al (2005), and Garvin and Levesque (2006):

- Identify the focal issue or decision to be analyzed
- List all the driving forces that affect the focal issue
 - Separate the driving forces into predetermined, whose evolution can be reasonably predicted, and uncertain
 - Rank the uncertain driving forces with respect to their impact on the focal issue, and identify their value range (e.g. extreme values)
- Create the scenario space by selecting the two most important uncertain driving forces - the critical uncertainties - using their value range as the axes of a two-dimensional graph
- Develop the scenarios based on the critical disruptive uncertainties and plot them on the scenario space (scenarios are usually characterized by a pair of extreme values of the critical uncertainties)
- Develop narratives describing the evolution of the world from its present state into that described by each of the scenarios, while considering the evolution of all the driving forces
- Assess the implications of each scenario for the focal issue
- Identify, for each scenario, early warning signals

Alternative scenarios of equally likely, plausible futures are developed using this theme-based approach. Each scenario is accompanied by a description of the end-state, an explanation of how the driving forces affected the primary parameters to result in the end-state, and a narrative description.

Scenario planning enhances strategic agility, which is the ability to have flexible, mindful responses to a constantly changing environment (Lewis et al 2014). Leaders are faced with an increasingly complex and changing environment that often renders decisions ineffective (Chermack, 2004). Mastery of this method assists executives to sustain organizations in complex systems partly because leaders are more capable of managing paradoxes within themselves, their teams and the wider organization.

A strategic option

When FEMA began its foresight study, it sought to prepare the emergency management community for future unknown challenges, create a shared sense of direction, instill a sense of urgency, and drive action toward meeting shared future needs. It recognized that the power of foresight lay not in its tools and methods but in its ability to alter perspectives and align stakeholders towards the evolving organization vision. Strategic foresight is a useful strategic planning tool because it provides a new lens through which to reframe all of our outdated processes that are less effective in the modern environment.

The foresight approach to strategic thinking and planning is very different from traditional planning methods, which tend to focus on the short term when uncertainty is lower. Traditional

methods increasingly fail as uncertainty increases, which is when foresight becomes useful. Rather than predicting the future or forecasting of future trends and conditions, and creating a master plan, the intent is to explore what the future might look like and determine preliminary actions that are likely to be effective in any future (FEMA 2012a).

Some often cited foresight competencies include:

- Curiosity: it is more important to ask “why?” than “what?” to explore the multiple causes of an issue and understand the values driving current trends
- Courage: recognize that the insights we share will make others feel uncomfortable, but it is in that discomfort that growth occurs
- Diversity: a diverse set of peers will challenge our assumptions
- Think outside the box: to expand thinking beyond the comfort zone
- Identify patterns: make sense of the intersection of trends
- Plurality: of futures rather than the traditional, single, linear forecast to create robust and resilient strategies that will be successful no matter which future emerges

As we contemplate the future, we instinctively think of the “top trends” that make the headlines. For most, the word trend has become synonymous with the future. This common but erroneous interpretation causes many strategic foresight efforts to stall because trends are not the future. Trends are visible because they have occurred in the past and they represent the present. Trends are potentially the proverbial red herring because they keep us connected to what is immediate and surrounding us, but fail to provide a window into the impacts of what is changing, what is emerging, and what is possible.

Dr. Deon Canyon is a professor at the Daniel K. Inouye Asia-Pacific Center for security Studies. The views expressed in this article are those of the author and do not reflect the official policy or position of the Daniel K. Inouye Asia-Pacific Center for Security Studies, the Department of Defense, or the U.S. government.

References

- Bootz J. Strategic foresight and organisational learning: A survey and critical analysis. *Technological Forecasting & Social Change* 2010;77:1588-1594.
- Bradfield R, Wright G, Burt G, Cairns G, van der Heijden K. The origins and evolution of scenario techniques in long range business planning. *Futures* 2005;37:795- 812.
- Brockmann EN, Anthony WP. Tacit knowledge and strategic decision making. *Group & Organization Management* 2002;27(4):436-455.
- Cardoso JF, Emes MR. The use and value of scenario planning. *Modern Management Science & Engineering* 2014;2(1):19-42.

- Chermack TJ. Improving decision-making with scenario planning. *Futures* 2004;36:295- 309.
- FEMA. Crisis response and disaster resilience 2030: forging strategic action in an age of uncertainty. Strategic Foresight Initiative, Federal Emergency Management Agency 2012a.
- FEMA. Foresight workshop how-to-guide. Strategic Foresight Initiative, Federal Emergency Management Agency 2012b.
- Garvin DA, Levesque LC. A note on scenario planning. *Harvard Business School* 2006;306(003):1-10.
- Horton A. A simple guide to successful foresight. *Foresight* 1999;1(1):5-9.
- Huss W, Honton E. Scenario planning – What style should you use? *Long Range Planning* 1987;20(4):21-29.
- Lewis MW, Andriopoulos C, Smith WK. Paradoxical leadership to enable strategic agility. *California Management Review* 2014;56(3):58-77.
- Miles I, Saritas O, Solokov A. *Foresight for science, technology and innovation*. Springer Switzerland 2016.
- Schwartz P. *The art of the long view: planning for the future in an uncertain world*. New York, NY: Doubleday, 1996.
- UNDP. *Foresight manual: empowered futures for the 2030 agenda*. Global Centre for Public Service Excellence, Singapore.
- Van der Heijden K. *Scenarios, strategies and the strategy process*. Nijenrode Research Paper Series, Centre for Organisational Learning and Change, 1997;1997-01.
- Vecchiato R, Roveda C. Strategic foresight in corporate organizations: Handling the effect and response uncertainty of technology and social drivers of change. *Technological Forecasting & Social Change* 2010;77:1527-1539.
- Vecchiato R. Environmental uncertainty, foresight and strategic decision making: An integrated study. *Technological Forecasting & Social Change* 2012;79:436-447.