# PRACTISING STRATEGIC FORESIGHT IN GOVERNMENT

## THE CASES OF FINLAND, SINGAPORE AND THE EUROPEAN UNION

RSIS Monograph No. 19

Tuomo Kuosa

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**Tuomo Kuosa**

**S. Rajaratnam School of International Studies**

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# FOREWORD

Ever since the end of the Cold War almost 20 years ago, numerous analysts have commented on the loss of the geopolitical and strategic certainties that the old Cold War bipolar system paradoxically offered. It is fair to say that in the past two decades governments have recognised that they had a lot more to worry about than inter-state war. Nowadays, one has to contend as well with religiously-motivated transnational terrorist networks who may well be seeking weapons of mass destruction; financial shocks that almost all experts and financial institutions fail to see coming; rapidly-spreading and deadly diseases that have global impact and natural disasters like cyclones, earthquakes and tsunamis, whose toll in human suffering and economic damage rival and even exceed those caused by warfare. Little wonder then that we have encountered the rise of "human" or "non-traditional" security, as opposed to traditional state-centric notions of national security. We have come to acknowledge the full force of W. B. Gallie's pithy observation many years ago that the term "security" is an "essentially contested concept", and what it means for governments, societies and individuals is mutable and evolves with time and environmental changes. Given the multi-fold uncertainties inherent in an evolving security landscape, it is obvious that it is in the interests of governments and communities everywhere to develop organic capabilities to better forecast over-the-horizon trends and emerging threats as well as—for that matter—potential opportunities for exploitation.

In this connection, this monograph, written by a young and upcoming Finnish scholar, Tuomo Kuosa, seeks to introduce interested readers to the national security implications of strategic foresight and the wider domain of futures studies. Tuomo had worked for several years in the well-known Finland Futures Centre in the prestigious Turku School of Economics in Finland and has written extensively on European approaches to futures thinking. It was felt that it would be of value to invite him to compare and contrast the Finnish and Singaporean approaches, in particular to strategic foresight and futures studies. Happily, Tuomo accepted a post-doctoral position in the centre and spent 2010 researching

these issues. The product is this monograph. Readers will benefit from the systematic way that Tuomo has organised his conceptual and empirical material, and will find much to mull over. It is hoped that this monograph will provide newcomers to the domains of strategic foresight and futures studies a good idea of what they are about. It is also hoped this monograph will be of much interest to students and practitioners of strategic foresight and futures studies both within and outside government.

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# PREFACE

*A skilful leader subdues the enemy's troops without any fighting, he captures their cities without laying siege to them, he overthrows their kingdom without lengthy operations in the field.*

– Sun Tzu

Strategic foresight is about understanding the whole landscape of a particular situation and the options that a decision-maker has in it. And it does not matter if we talk about decision-makers of military, economical or political situations, as the ultimate set in each of those is the same. It is most important to have good foreknowledge and understanding of yourself and your enemy, and the timing and terrain where you fight before you set your strategy, no matter what your field of business is. When you have good foreknowledge and a winning strategy, you can win without fighting. That is the fundamental of strategic foresight that is done for those who are in power. Hence, the foresight that is done for those who are not in positions to make big decisions is different, and it should be given a different name. Such foresight needs to involve as many stakeholders as possible in order to launch a change from the grassroots level. Should we call it "participatory foresight"? Nevertheless, foresight, whether it is strategic or participatory by its nature, is necessary for steering the future. Without any foresight, we are like logs in a river or ship captains without a compass.

This book discusses the practice of strategic foresight in public decision-making of the governments of selected countries. It attempts to answer the questions: What could be done to strengthen the linkage between foresight and decision making? How could we develop our foresight systems to answer better the needs of public decision-making?

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PART I

# Concepts

*Knowledge of the higher parts of war is acquired only through the study of history of the wars and battles of the Great Captains.*

– Napoleon

# 1

# INTRODUCTION

Strategic foresight is a branch of strategic thinking that has been practised in politics, military and business management for as long as the disciplines have existed. It focuses on generating analyses of possible futures and alternative strategies, based on available intelligence and foreknowledge. Strategic foresight has not been considered as an independent discipline so far, but it can be said to be steadily evolving in that direction.

This book is organised into three main parts: "concepts", "country cases" and "expert interviews". The main focus of the book is on the foresight systems and practices in certain countries, and on interviews that discuss the ways to develop public strategic foresight systems.

In Part I, the "concepts" are divided into seven sub-chapters that discuss the key concepts and processes that are related to strategic foresight. The book first discusses the question of what is strategic and from where that concept originates and why. Then, it defines the principles of foresight and discusses its linkages to futures studies, which will be defined next. These two concepts have some similarities as well as a few clear differences, as will be shown. After these key concepts have been discussed, the process of strategic foresight will be discussed, especially the methods that it usually incorporates, and the order of the phases that it follows.

In Part II, "country cases" discusses the general structures and organisations of a few countries' governments strategic foresight systems. Two of the countries, Finland and Singapore, are selected for a closer look. There are three reasons for this selection. Firstly, I have lived most of my life in Finland and I have good contacts with its government agencies.

Secondly, I have worked throughout the whole of 2010 at Singapore's S. Rajaratnam School of International Studies, Nanyang Technological University, which provided me the opportunity to be introduced to the country's public foresight system. This first-hand experience is much better than what one could achieve just from reading official documents. And thirdly, the Finland-Singapore axis provides a very interesting comparative case, as they both represent especially strong futures orientation, but in very different ways.

In Part III, "expert interviews" features nine interviews of international experts who represent very different foresight backgrounds and "schools" of strategic foresight. This chapter discusses the ways on how national strategic foresight, which is linked to national policy-making, could be improved and how it could produce better results, and how the experts could see public strategic foresight be developed.

## 2

# WHAT IS STRATEGIC?

The word "strategic" originates from military where it refers to military planning, which is concerned with the overall plan and means for achieving a long-term outcome. It defines the terms and conditions in which the battle is fought on, and whether it should be fought at all.[1]

"Successful strategy is based upon clearly identifying political goals, assessing one's comparative advantage relative to the enemy, calculating costs and benefits carefully, and examining the risks and rewards of alternative strategies".[2] Carl von Clausewitz says that the purpose of military strategy is to win the war[3] by destroying the enemy's army and thus compel him to do our will; Sun Tzu recommends that the best alternative is to attack the enemy's strategy—to convince the enemy that he cannot achieve his aims. This is what he calls winning without fighting. The next best alternative is to attack his alliances and supplies. Destroying the enemy's army ranks third on Sun Tzu's list of preferred strategies in winning a war.[4]

In a hierarchical sense, the strategic level is the third level of military planning or warfare. Above it are the *political goals* or the military's grand strategy,[5] and below it is the second level, which is the *operational level*. The units are organised into formations, comprising a higher level of planning known as the operational use of forces. Operational warfare is thus an intermediate level in which the aim is to convert the strategy (higher level) into *tactics* (lowest level of planning), which is concerned with the conduct of an engagement—how a battle is fought in the front line.[6]

On another hand, the basic logic of strategy is universal,[7] for the reason that people everywhere across time and space are very much the

same in their basic nature. Besides that,[8] "there is something missing from this style of interpretation, since in order to understand any war, one must grasp its political as well as purely military characteristics. And while the logic of strategy does transcend history and geography, politics are earthbound, the product of specific circumstances, cultures, and institutions".[9]

Along with military planning, strategic study and planning can be considered as one of the central branches of politics and political theory as well. The roots of strategic studies in political science go back to the work of Niccolo Machiavelli who can be considered as the first modern political strategist and scientist.[10] However, when the concepts of strategy and political power and grand goals are studied in modern political studies, the focus is usually on aspects of moral, order, rhetoric, semiotic and justice, rather than on how the concepts can be refined to aid our understanding of the dynamics of political life. Lawrence Freedman argues that this lack is mainly due to the "acknowledged dilemma"—in order to go to such ultimate issues in politics, one need to regard political life through the eyes of the practitioners, which is considered improper in the discipline of political studies.[11]

A third field where strategic planning is seriously practised, studied and defined is business management.[12] That seems to be the field where most of the academic writing regarding strategies is taking place with new strategy themes and views constantly emerging in the discussion of business management. For instance, in recent years, one of the most popular strategy themes has been to adapt Sun Tzu's teachings and war metaphors to certain branches of business, leading to book titles such as *Sun Tzu in Business*, *Sun Tzu in Marketing*, etc.

According to Henry Mintzberg et al.,[13] there is a specific school in business strategy studies, which attempts to identify the ontology of strategy work—"the cognitive school". Under this, Mintzberg[14] has discussed about the distinction between the two concepts "strategic planning" and "strategic thinking":

- *Strategic thinking* is about synthesis and it defines options. It involves intuition and creativity to formulate an integrated perspective or vision of where an organisation should be heading. It

is generally intuitive, experimental and disruptive, and attempts to go beyond what pure logical thinking can inform.

- *Strategic planning* is the process of defining a strategy, or direction, and making decisions based on allocating its resources to pursue this strategy. It is a process of analysis, breaking down a goal or set of intentions into steps, formalising those steps so that they can be implemented and articulated according to the anticipated consequences or results of each step. It is clearly an activity requiring thinking which is strongly analytical, logical, deductive and pragmatic, in order to ensure that a particular course of acting stays on track. It is in clear contrast with strategic thinking.

Joseph Voros[15] has emphasised the necessity to separate a third concept from these two aspects of strategy work. While strategic thinking is about exploring options, and strategic planning is about implementing actions, an intermediate level between these two is s*trategy development*, the actual process of making decisions.

Another way to look at business strategy is to analyse its characteristics. Mintzberg et al.[16] have outlined the following five types of business strategies: (i) plan: a vision of the future, how to get from here to there, (ii) pattern: identifying common denominators of historical success, (iii) position: locating successful products in particular markets, (iv) perspective: a company's way of doing things, and (v) plot: a specific operation to beat the competitor.

### *Notes*

1. See Clausewitz, Carl von (1989). *On war.*
2. Mahnken, Thomas G., & Maiolo, Joseph (Eds.) (2008). *Strategic studies: A reader*. New York: Routledge, 2.
3. The fact that war involves use of force differentiates it from other forms of competition such as economic, political and social competition. The fact that war is an instrument of that is used to achieve political goals differentiates it from other forms of violence. Ibid. As Bismarck said, when the work of politicians end, the work of solders begin.

4. Ibid, 51, Clausewitz, Carl von (1989). *On war.*
5. In the Prince (2004), Machiavelli gives the very meaning for the concepts political goals and grand strategy of the military, and explains how all other public policy, strategies and operations are subordinate to the strategic political goals of the prince.
6. For example, Kuusisto (2008).
7. Handel, Michael I. (2000). *Masters of war: Classical strategic thought*. New York, Routledge.
8. Handel, Michael I. (2001). *Masters of war: Classical strategic thought, 3rd ed*. London: Frank Cass, 364.
9. Fuller, William C. Jr. (2008). "What is a military lesson?" In Thomas G. Mahnken & Joseph A. Maiolo (Eds.) (2008), *Strategic studies: A reader.* New York: Routledge, 37.
10. Edward M. Earle considers him as the first modern strategist in his book, *Makers of Modern Strategy* (1962).
11. Freedman, Lawrence (2008), "Strategic studies and the problem of power". In Thomas G. Mahnken & Joseph A. Maiolo (Eds.) (2008), *Strategic studies: A reader.* New York: Routledge, 26.
12. See, for example, Porter, Michael (1980), *Competitive strategy*. New York: Free Press; Hamel, Gary (1994), "The concept of core competence" in G. Hamel & A. Heene (Eds.), *Competence based competition*. Chichester: Wiley; Prahalad C. K., & Hamel, Gary (1990), "The core competence of the corporation". *Harvard Business Review*, May–June (1990), 79–91; Hamel, Gary, & Prahalad C. K. (1994), *Competing for the future*. Boston: Harvard Business School Press.
13. Mintzberg, Henry, Ahlstrand, B., & Lampel, J. (1998). *Strategy safari. A guided tour through the wilds of strategic management*. New York: The Free Press.
14. Henry Mintzberg (1994).
15. Joseph Voros (2003).
16. Mintzberg et al. (1994).

# 3

# WHAT IS FORESIGHT?

The term "foresight" was used for the first time in a BBC broadcast in 1932 by visionary author H. G. Wells, who called for the establishment of "Departments and Professors of Foresight". Here, it refers to a process of anticipation, which are attempts to say something about future probabilities and options for actions. While (hind)sight is about understanding the past, (In)sight is about understanding the present, (fore)sight is about understanding the future systematically.

Foresight and futures studies are intertwined in many ways. The guiding principle for both is that in almost all cases, the future cannot be predicted, as it is not there yet. At best, alternative scenarios and some probabilities can be given to social phenomena, as they are too complex to be forecasted. Yet, the future can be created with actions of today—and therefore, partly known too. And much of the future is here already in today's values, objectives, drivers and trends, and that can be studied systematically. Two particular characteristic concerning for both foresight and futures studies are:[1]

- Concern for the longer-term futures that are usually at least 10 years away (though there are some exceptions to this in foresight, especially in its use in private business—see business intelligence).
- Concern for the alternative futures. It is helpful to examine alternative paths of development, not just what is currently believed to be most likely or business as usual. Often futures work needs to construct multiple scenarios. These may be an interim step during the process of creating what may be known as positive visions, success scenarios and inspirational futures. Sometimes, alternative scenarios will be a major part of the output of futures work.

On the other hand, foresight and futures studies have several things in contrast too. For example, the origins of the two are different. While the roots of futures studies trace back to humanistic orientation of Futurology[2] (1972), which will be discussed in next sub-chapter, the history of foresight/technocratic orientation of futures studies, traces back to military strategies and military technology foresight which are done especially in the U.S. military's research units and think tanks, such as RAND (Research and Development—a mutual project of U.S. Army Air Corps and Douglas Aircraft Company) in 1940s and 1950s.[3]

To specify the approach of foresight, we can say that it attempts to be more systematic, logical, participatory, and planning or management oriented, but less value rational in comparison to futures studies. Strategic Foresight Group defines foresight as a combination of forecasting with insight. While forecasting requires methodologies, generated by computers or otherwise, insight requires a deep understanding of the subject concerned. Foresight is developed by applying forecasting methodology to insight.

Another way to define foresight is presented by Richard Slaughter[4] who defined it as a process that attempts to broaden the boundaries of perception in four ways:

- By assessing the implications of present actions, decisions, etc. (consequent assessment);
- By detecting and avoiding problems before they occur (early warning and guidance);
- By considering the present implications of possible future events (pro-active strategy formulation); and
- By envisioning aspects of desired futures (preparing scenarios).

On the other hand, Averil Horton[5] has defined the entire foresight process[6] in the following way: "It has three distinctive phases which are: "input", "foresight" and "output" (…) each phase creates a greater value than the previous one as the outputs move up the information value chain from information through to understanding, and finally to wisdom. However, this value is only realised at the very end of the process and then often with a significant time lag. Each phase is also more difficult and time consuming, more abstract, and less easy to measure than the

preceding one. In a successful foresight process, these three phases will result in taking decisions and actions which will be different to those which would have been carried out in the absence of the process".

The first phase of the foresight process, the input phase, comprises of the following parts: collection, collation and summarisation of available information. Its first part, collection of information, comprises: information collection on futures themes, trends,[7] ideas, early signs and wild cards collected from a wide range of sources such as experts, universities, business networks, personal networks, customers, suppliers, the literature, government, other foresight reports, research and surveys. There are many methodologies and processes that can be employed, such as horizons or environmental scanning,[8] Delphi,[9] surveys, systematic reading, brainstorming sessions, abstracting, and simply by talking to people. The major characteristic of this information is its sheer volume; it is broad in scope, overlapping and often contradictory.

The second and third parts of the input phase comprise of collation and summarisation of the collected information. In this case, the information is given a structure and form, and its volume is reduced, and the relevant parts are not eliminated. The information is then summarised in order to present it in a manageable form. Again, there are general methodologies and processes available, such as scenario building, list writing and prioritising, graphical comparisons, matrix production, and cross impact analysis.[10]

The second phase of the foresight process which is the actual foresight phase, comprises of the translation and interpretation of this information to produce an understanding of its implications for the future from the specific point of view of a particular organisation.[11] It involves activities, tools, skills and people to do the translation and interpretation work. The foresight phase should answer the following questions:

- What does this mean for my organisation?
- What are the implications for us?
- What can we do about it today?

According to Horton, the second phase, especially the interpretation step, is what foresight is all about; it is critical to the process. It is where most of the value is added, generating an understanding of what can (or

cannot) be done for the future. Interpretation, the most crucial step in the whole process, is poorly understood, and has few theoretical techniques.

The third phase of the foresight project, the output phase, comprises of the assimilation and evaluation of this understanding to produce a commitment to action in a particular organisation.

However, there is one aspect that was given quite little attention in Horton's, Slaughter's, Strategic Foresight Group's, and in many other's foresight definitions, and that is the participatory element. The interactive, dialogic, involving and networking part, commits all stakeholders to the process and to the shared views and visions. Many foresight experts, such as Erik Terk, Riitta Kirjavainen, Ian Miles, Michael Keenan, and Jari Kaivo-oja have emphasised the participatory part of foresight as one of its most important parts. This comes especially clear in the "Practical Guide to Regional Foresight" (FOREN) report, which many foresight practitioners consider as the "official" European Union's definition on foresight.

The FOREN report[12] defines foresight as follows:

> Foresight is a systematic, participatory, future-intelligence-gathering and medium-to-long-term vision-building process aimed at present-day decisions and mobilising joint actions. Foresight arises from a convergence of trends underlying recent developments in the fields of 'policy analysis,' 'strategic planning' and 'future studies.' It brings together key agents of change and various sources in order to develop strategic visions and anticipatory intelligence". FOREN working group highlighted the value of the participatory element in foresight by saying "The difference between Foresight and other planning activities relates to the participative dimension of Foresight. (…) Common features of Foresight include: a long-term orientation, the examination of a wide range of factors, the drawing on widely-distributed, the institutionalisation and creation of networks and the use of formal techniques/methods. Formal methods provide more operational results, assess the consistency of different aspects of the vision, help to identify where more is needed and legitimise the exercise (…) Foresight is a very evocative label for the rise to prominence of participative methods and long-term strategic futures techniques, in the wake of more traditional ways of informing policy planning.

The differentiating factors between the concept of foresight and other futures field concepts are shown in Table 1 in Chapter 7.

## *Notes*

1. See definition in Wikipedia: http://en.wikipedia.org/wiki/Foresight_(futures_studies)
2. Ossip Flechtheim (1972): Futurology.
3. Bell, Wendell (2005): Foundations of Futures Studies: Human science for a new era. Vol. 2: Values, objectivity, and good society. New Brunswick, N.J.: Transaction Publishers.
4. Richard Slaughter (1995, 48).
5. Averil Horton (1999, 6–8).
6. See the description of strategic foresight process in Figure 2, in Chapter 3.
7. The idea of trend analysis in strategic foresight process has been explained in Liebl, Franz & Schwarz, Jan Oliver (2010): Normality of the future: Trend diagnosis for strategic foresight. *Futures* 42 (2010), 313–327.
8. See Slaughter, Richard A. (1999), "A new framework for environmental scanning", *Foresight* 1(5) (1999), 441–451; Reinhardt, W. A. (1984), "An early warning system for strategic planning", *Long Range Planning* 17(5) (1984), 25–34; Schultz, Wendy L. (2006), "The cultural contradictions of managing change: Using horizon scanning in an evidence-based policy context", *Foresight* 8(4) (2006), 3–12; and Voros, Joseph (2001), Re-framing environmental scanning: An integral approach. *Foresight* 3(6) (2001), 533–551.
9. Example, Kuusi, Osmo (1999).
10. Voros (2003) and I have added many methods and principles to Horton's phases of foresight—see Figure 3 in the later chapter.
11. Example, Kuusisto (2008).
12. *European Commission Research Directorate General (2001): A Practical Guide to Regional Foresight (FOREN).* European Commission – Joint Research Centre – Institute for Prospective Technological Studies (IPTS) (Eds.), European Communities, STRATA Programme, pp. v–viii. http://foresight.jrc.ec.europa.eu/documents/eur20128en.pdf.

4

# WHAT IS FUTURES STUDIES?

The roots of futures studies trace back to humanistic orientation of Futurology, which was introduced by Ossip Flechtheim in 1943. Flechtheim's book[1] (1972) could be seen as the key player in launching the idea of modern "soft, visionary or idealistic" futures research, echoing much of the United Nation's great objectives. In his book, Flechtheim stated that futurology should attempt to solve the following great problems of mankind: (i) preventing wars and guarantee peace, (ii) preventing famine and poverty, (iii) preventing oppression, (iv) enhancing democracy, (v) ending extortion of nature and enhancing conservation of nature, (vi) fighting against alienation, and (vii) creating the new Homo Humanus.[2]

To specify the approach of futures studies, Pentti Malaska[3] has identified it as a value-rational field, which in that sense, contrasts with all normal sciences, which aim to value neutralism. Futures studies takes its stance on different alternatives and describes proactively its own desired futures images. It attempts to explicate the possible prospects and consequences of different decisions in order to question or promote certain values or procedures. It claims that even values can be rationally discussed and studied. Malaska stresses that futures studies[4] is a scientific field. Only that it has a broader scope of research than the normal sciences, as its research objective does not exist in an empirical sense, because it is contingent and undefined by nature. Yet, this does not mean that we could not get relevant futures from our present environment, in the same way as we can get history or marketing. Hence, this unusual research objective has led the research field into a unique epistemology which differentiates it from principles and methodologies of all normal sciences.

According to Malaska and Holstius,[5]

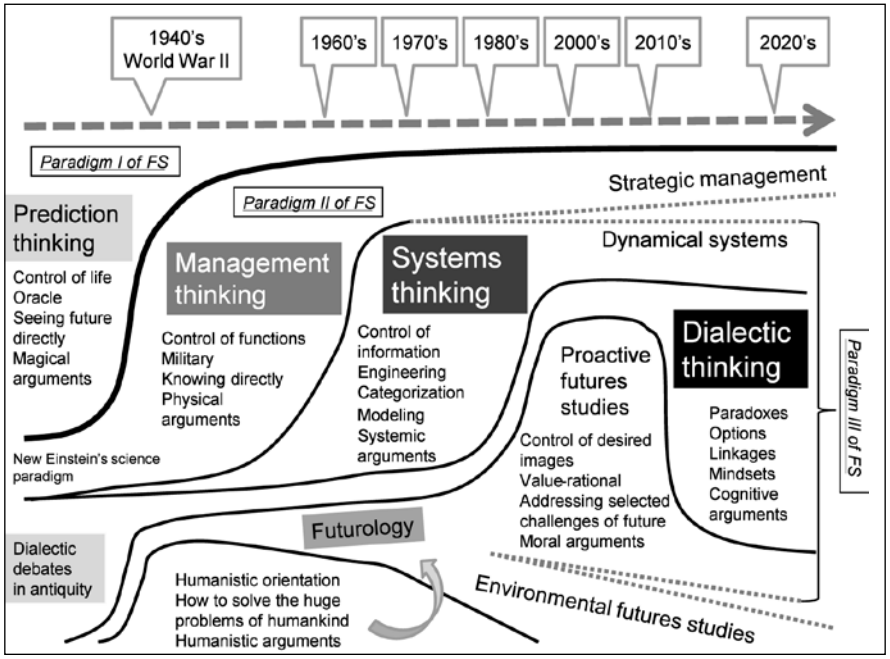
> There are three main variants of decisions: opportunistic, strategic and visionary. When an *opportunistic decision* is made, the situation is known with certainty and it is evaluated in the short-term, the resources are fixed and the purpose is to maximise immediate profit and cash flow. In the case of *strategic decisions*, the situation is assumed to be changing but still predictable during the time frame of the decision. Beneficial reallocation of resources is a reaction to the predicted changes and the purpose of adaptation is to strive for growth and improved return on investment, i.e. to improve the conditions of opportunistic management. *Visionary decisions* become appropriate when the situation is assumed to include discontinuities and be unpredictable in the long term. New skills are needed to reframe and envision the business, and the purposes aimed are: maintaining excellence performance and creating novel options, or survival in the longer run.

To conclude the discussion around the foresight and futures studies, we should go back to Henry Mintzberg's[6] division of two distinctive strategic work approaches: strategic planning and strategic thinking. The first refers to strongly analytical, logical, deductive and pragmatic thinking, in order to ensure that it stays on track. The second refers to thinking which involves intuitive, experimental, disruptive, creative attempts to go beyond what purely logical thinking can inform, and integrated perspective or vision of where an organisation should be heading.

In regard to Mintzberg's division, Joseph Voros[7] argued that, as information about potential futures is always incomplete, the thinking required for success in foresight needs to be synthetically and inductive, rather than analytical or deductive. Hence, according to Voros, a good "foresight is an aspect of strategic thinking, as it is meant to open up an expanded range of perceptions of the strategic options available, so that strategy making is potentially wiser. Foresight (as strategic thinking) is concerned with exploration (based on limited and patchy information) and options, not with the steps needed for the implementation of actions, which is the realm of strategic planning. The former is intuitive, disruptive and "what ifs" in nature whereas the latter is goal-oriented, pragmatic, deductive and "make it happen/can do" in nature". However, based on the discussion and the divisions presented above and in the

previous chapter, I argue that futures studies is merely an aspect of strategic thinking (the former combined to visionary, proactive and value rational approach), when foresight (especially strategic foresight) combines equally strongly both aspects, the strategic planning and the strategic thinking (with much less value rational emphasis, but much more pragmatic and short-term strategic emphasis).

FIGURE 1
**Evolution of futures studies**




If we look at the view of futures studies from where we try to map the evolution of the field of futures interests, the change in field's objectives and its methodological understanding, we can draw the following figure.

Figure 1[8] attempts to describe the paradigms of futures studies and interests of futures, and especially to anticipate the possible forthcoming direction of futures studies, but it can be used in describing the difference between foresight and futures studies too. If we think that futures studies is heading towards value rational, visionary, dialectic thinking,

we may say that foresight is heading to combine strategic management and thinking, dynamical systems thinking, and dialectic thinking.[9]

In the sense of time range and interest, we may say that foresight focuses on helping strategic decisions. It aims to know more directly, and to help to establish more robust strategies in domain of strategic management. It operates mostly in mid-range future (3–10 years). Futures studies operates on long-term future (10–50 years)[10] where it focuses on visionary decisions, which means that it attempts both to go deeper and more critically to the un-predetermined and uncertain foundations of futures emergence, and define visions and novel actions for survival and good future.[11]

### *Notes*

1. Ossip Flechtheim (1972): Futurology. Org. Presented in 1943 by Flechtheim.
2. Bell (2005, 29).
3. Pentti Malaska (2003a, 13).
4. Pentti Malaska and Eleonora Masini have defined futures research as the field which focuses on research of futures, and futures studies as the field which combines both research and education of futures.
5. Malaska and Holstius (1999, 354).
6. Henry Mintzberg's (1994).
7. Joseph Voros, 2003, 12).
8. Figure is from Kuosa (2010b).
9. See the discussion around six pillars methodology in Chapter 3.
10. We may say that the time range which goes over 50 years is out of the domain of futures research as it is almost entirely unpredictable. Hence, we could call the time range that goes over 50 years as the domain of science fiction.
11. Malaska and Holstius (1999, 355) define the domain of opportunistic management to range 1–3 years in the future, strategic management to 3–5 years in the future, and the visionary management to +5 years in the future in their Figure 2. Kaivo-oja et al. (2004, 543) have modified the idea to their Figure 7, where they say that, operational management operates in time range 0–1 years in the future, strategic management operates in time range 1–10 years in the future, and visionary management in time range 10–50 years in the future.

5

# THE PROCESS OF STRATEGIC FORESIGHT

Strategic foresight relates to foresight of strategic issues. Namely, it is a process that enhances persons' or organisations' abilities to understand the emerging risks and opportunities, path-dependencies, drivers, co-evolution, motivations, resources, and causalities that are linked to alternative decisions, that forms the space of possible, plausible, probable or preferred futures paths, so that they can be better informed and prepared decisions in issues, which are "concerned with the organisation's overall strategic plans and means of achieving its long-term objectives". In other words, what differentiates strategic foresight from other foresight is its ability to help a (large) organisation to "define the terms and conditions in which the "battle" is fought on, and whether it should be fought at all".

> Strategic foresight is about getting foreknowledge to someone who wants to win a political, military or business battle.
>
> – Kuosa

Strategic foresight is something to which Sun Tzu gives specific esteem in his book, *The Art of War*:[1] "Foreknowledge enables wise general to achieve things beyond the reach of ordinary men". According to Sun Tzu,[2] before you decide to go to war, you must determine all the military conditions as objectively as possible, and in the following order:

1. Which of the two sovereigns has a stronger determination to win (Moral Law)?
2. Which of the two generals is more skilful?
3. Which side has the advantage of the topography, weather and light conditions?

4. Which side has a stronger discipline?
5. Which army is bigger and better equipped?[3]
6. Which side has better trained officers and men?
7. Which side is more consistent in its punishments and rewarding?

Sun Tzu said, "After studying these seven conditions, I can forecast which side wins and lose (…) If you know the enemy and yourself, you need not to fear the result of a hundred of battles. If you know yourself but not the enemy, for every victory gained, you will also suffer a defeat. If you know neither the enemy nor yourself, you will lose in every battle".[4]

To be able to do such judgements, you need reliable intelligence of the enemy and "this cannot be elicited from spirits, it cannot be obtained inductively from experience, nor by any deductive calculation. It can only be obtained from other men.[5] (…) Hence, spies are the most important element in war, because an army's ability to move depends on them. (…) It is always necessary to begin by finding out the names of the attendants, the aides-de-camp, the door-keepers and guards of the general in command. Our spies must be commissioned to ascertain these".[6]

According to Sun Tzu, there are five classes of spies, and all of these should be used at the same time: (i) local inhabitants of the district, (ii) long-term infiltrated spies (inward spies), making use of officials of the enemy, (iii) double agents (converted spies), getting hold of enemy's spies and using them for your own purposes, (iv) doomed spies, for deception, they carry false information and are reported to the enemy, and (v) surveillance spies (surviving spies), are those who have been sent to enemy's camps and who come back with news.[7]

Hines and Bishops[8] have defined strategic foresight as "an ability to create a variety of high quality forward views and to apply the emerging insights in organisationally useful ways; for example to detect adverse conditions, guide policy, shape strategy, and to explore new markets, products and services." This is to say that strategic foresight operates in several stages of strategy work. As already discussed in strategic and foresight chapters, Henry Mintzberg has defined the difference between strategic thinking (alternatives and "what ifs" questions), and strategic planning (breaking the objectives into steps); and Averil Horton[9] has identified the three phases of all (strategic) foresight input (its sub-steps:

collation and summarisation), foresight (its sub-steps: translation and interpretation), and outputs (its sub-steps: assimilation and evaluation). And Richard Slaughter[10] has defined the four types of methodologies that can be employed in (strategic) foresight, in general:

1. Input methods, which are used to gather intelligence from various sources.
2. Analytic methods, which are used to analyse and assess factors and their interrelationships, usually as a first step towards a deeper and more detailed work.
3. Paradigmatic methods, which seek to deepen understanding.
4. Iterative and exploratory methods, which are used to explore future states to create the "forward views" so they are "prospective" in nature.

Based on these three classifications, Joseph Voros[11] has made his *generic foresight process framework*, which attempts to specify the universal levels, functions and methodologies of strategic foresight processes. Voros suggests several methods or methodologies for use in each level. The framework is adapted and modified in Figure 2.

Furthermore, Hines and Bishop[12] define the six steps of strategic foresight as follows. Framing contains guidelines regarding attitude, teams, rational and objectives. Scanning contains guidelines concerning the system, history, context and how to scan information regarding the future of the issue. Forecasting uses the information from scanning and outlines guidelines regarding drivers, uncertainties, tools and alternatives. Visioning contains guidelines which focused on thinking through the implications of the forecast and envisioning designed outcome for the organisation. Planning contains guidelines that develop the strategy and options for carrying out the vision; and acting contains guidelines for communicating the results, developing action agendas, and institutionalising strategic thinking and intelligence systems.

Sohail Inayatullah[13] has identified the six pillars of futures thinking to transform the futures. The pillars are: mapping (futures triangle), anticipation (futures wheel, emerging issues analysis), timing (macro-historical analysis), deepening the futures Four-Quadrant model, Causal

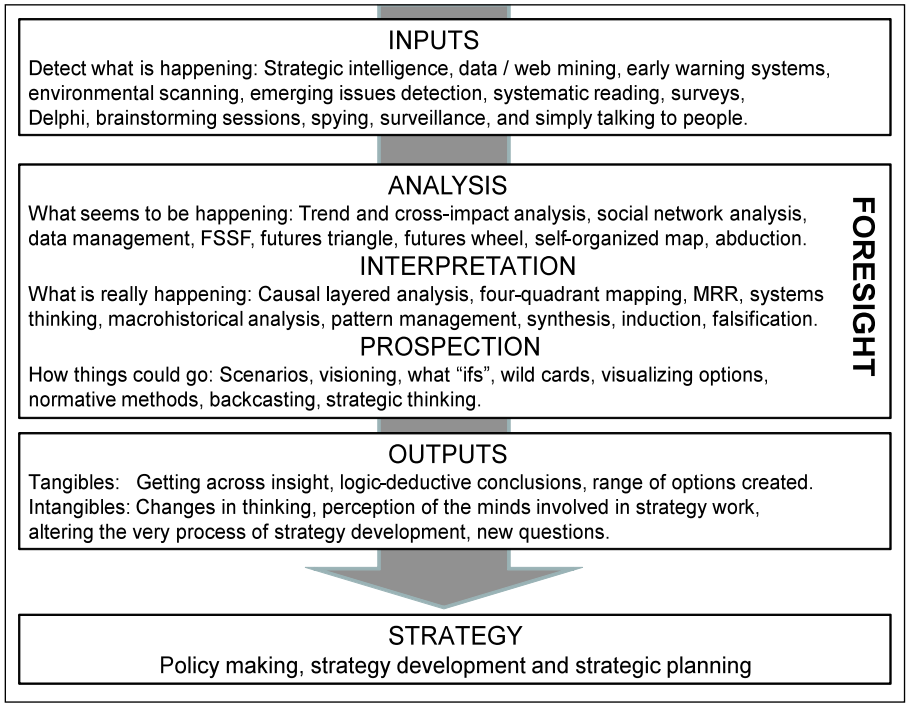
Layered Analysis,[14] creating alternatives (scenarios), and transforming the future (back-casting, transcend method). The methodology presented by Inayatullah has many similarities with both the Hines and Bishop's six steps, and the generic strategic foresight framework of Voros, but it is different in many senses too. The objective of the six pillars is to present the pragmatic pro-active process, how one can grasp and change the future. In that sense, it seems like a strategic foresight process, but it does not aim to form a strategy. Instead, it aims to find a mutually desirable future objective or image, and it can be said to operate almost only on the foresight and outputs boxes of Figure 2. Specifically, it does not really operate even in all parts of foresight, as it merely operates in Interpretation, Prospection, and Outputs parts, and not so much with analysis. Hence, six pillars methodology is merely a meta-framework of futures studies,[15] and not so much a strategic foresight framework.

The methods, methodologies and questions that are given in Figure 2 as picked examples of working in each level of the strategic foresight process, originate mainly from the five sources that were mentioned above. However, there are some additional parts which have not been explained yet, such as Future Signals Sense-making Framework (FSSF),[16] which is a specific management method for sense-making and outlining various forms of input information into six categories, and SIF-model, which is a framework of Strategies for Inferring Knowledge in foresight.[17] The other parts in the figure, namely inferring methods (abductive, inductive, deductive), intelligence methods, and data and pattern management methodologies, will not be explained here but the references provided[18] can help to find relevant information.

Figure 2 represents a universal strategic foresight process, but it should be acknowledged that strategic foresight can also be practised in several different domains, as listed bellow,[20] where all of them have different objectives, contexts and epistemologies:

- Pragmatic foresight: *"*Carrying out tomorrows' business better*"*[21]
- Progressive foresight: "Going beyond conventional thinking and practices and reformulating processes, products, and services using quite different assumptions."[22]

FIGURE 2
**Strategic foresight process**[19]




- Civilisational foresight: "Seeks to understand the aspects of the next civilisation—the one that lies beyond the current impasse, the prevailing hegemony of techno/industrial/capitalist interests."[23]

This means that the methods and the emphasis of different levels may vary. In some domains, it is possible to have in foresight level's analysis only some quantitative or economic data analysis practices, and in its interpretation, only some data clustering and funnelling practises, leaving no room for alternative views, paths and out-of-the-box thinking creation, in its prospection, participatory elements, or changing the thinking in its outputs. However, I would argue that we should not use

the word foresight when we talk about such a narrow intelligence process. It is merely strategic intelligence or business intelligence process or more narrow surveillance process, not foresight. But it can still be a part of strategic foresight process.

### *Notes*

1. Sun Tzu (2004, 59).
2. Sun Tzu (2004, 7–17).
3. It has been said that before WWII, Josef Stalin believed only on number of men and equipments of the army. When someone talked about the power of the Pope, Stalin replied, "How many tanks and guns does the Pope have?" When there was no answer, he bluntly stated, "Then the Pope has no power". Then, at the beginning of WWII, Stalin attacked Finland on 30 September 1939 (according Molotov-Ribbentrop pact). Finland had small poorly equipped army that lacked even ammunition. The Soviet Union had astonishing superiority in numbers of tanks (hundred times more), artillery guns and airplanes (30 times more), men (three times more), and it had better discipline, but Finland had absolute superiority in almost all the other aspects Sun Tzu mentions. What happened was that Finland made prevention victories in both "Stalin's" wars, caused heavy damages to the Red Army, and kept its sovereign independence. There were only three capitals of European countries that took part in WWII which were not occupied in the war: London, Moscow and Helsinki. In comparison, Poland, which had a much bigger army by numbers (on paper), could barely resist two weeks of the German and Russian army attacks at the same time.
4. Sun Tzu (p. 17).
5. See the sub-chapter, "What national intelligence agencies do?", where there are examples of current spying and surveillance activities.
6. Sun Tzu (p. 59–61).
7. Sun Tzu (p. 59–61).
8. Andy Hines & Peter Bishop (Eds.) (2006).
9. Averil Horton (1999, 6–8).
10. Richard Slaughter (1999, 287).
11. Joseph Voros (2003,14–15).
12. Andy Hines & Peter Bishop (Eds.) (2006).

13. Sohail Inayatullah (2008).
14. See Wilber, Ken (1997), "An integral theory of consciousness", *Journal of Consciousness Studies* 4 (1997), 71–92; and Wilber, Ken (2000), *Integral Psychology: Consciousness, Spirit, Psychology, Therapy.* Boston: Shambala.
15. Kuosa, Tuomo (2009).
16. Kuosa, Tuomo (2010a).
17. Kuosa, Tuomo (2011c).
18. Parsaye, Kamran (1999), "From data management to pattern management", *DM Review Magazine*, January issue, 1999; and Kuosa, Tuomo (2010c), "Different approaches of pattern management and strategic intelligence", *Technological Forecasting and Social Change*. Available online 13 July 2010. doi:10.1016/j.techfore.2010.06.004. (in press); CIA (2006), *Factbook on Intelligence*, The George Bush Center for Intelligence, Washington, D.C.: Office of Public Affairs, CIA. http://www.cia.gov/cia/publications/facttell/index.html; CIA (2000), *International Crime Threat Assessment*, Office of Public Affairs CIA; Hintikka, Jaakko (1998), "What is abduction? The fundamental problem of contemporary epistemology", *Transactions of the Charles S. Peirce Society*, 34(3), 503–533; Paavola, Sami (2004a), "Abduction as a logic and methodology of discovery: The importance of strategies", *Foundation of Science* 9 (2004), 267–283; Paavola, Sami (2004b), "Abduction through grammar, critic, and methodeutic", *Transactions of the Charles S. Peirce Society*, 40(2), 245–270; Paavola, Sami, Hakkarainen, Kai, & Sintonen, Matti (2006), "Abduction with dialogical and trialogical means", *Logic Journal of IGPL* 14(2), 137; Peirce, Charles S. (Kenneth Ketner, Ed.) (1992), *Reasoning and the logic of things: The Cambridge Conferences Lectures of 1898*, Cambridge: Harvard University Press; Peirce, Charles S. (1905), "What pragmatism is", *The Monist*, Vol. XV, No. 2, pp. 161–181, The Open Court Publishing Co., Chicago, IL, April 1905, for the Hegeler Institute, reprinted in *Collected Papers* v. 5, paragraphs 411–437 and *Charles S. Peirce: Selected Writings* 180–202; Arisbe and Potter, Jonathan (1996), *Representing reality: Discourse, rhetoric and social construction.* London: Sage; Quiggin, Thomas (2007), *Seeing the invisible: National security intelligence in an uncertain age.* Singapore: World Scientific Publishing.
19. Figure 3 is mostly adapted and modified from Figure 3 in Voros (2003) and partly from Figure 1 in Horton (1999); Figure 1 in Habegger (2010); Figure 1 in Costanzo (2010); Inayatullah's 2008 six pillars; Mintzberg (1994); and Slaughter (1995 and 1999); and also partly from Major et al. (2001); Voros (2001); and Lieble & Schwarz (2010).

20. These three domains were listed in Wikipedia of strategic foresight in July 2010. I believe that this list is not exhaustive but it gives some insight. Furthermore, I think that the current (July 2010) form of definition of strategic foresight given in Wikipedia is not accurate.
21. Hamel & Prahalad (2004).
22. Slaughter (2004, 217).
23. Ibid.

6

# LEVELS OF STRATEGIC FORESIGHT IN PUBLIC POLICY MAKING

Many governments have realised that a single-issue focus is often insufficient in dealing with emerging threats and opportunities. They have therefore, started to experiment with strategic foresight that deliberately cuts across the traditional boundaries of policy areas and government departments. In the past, public policy focused mostly on science, technology, and innovation policy, however, now the focus is beginning to incorporate societal and economic issues to health, environment or national security, and international initiatives are starting to combine the various national experiences in order to upgrade them to a higher strategic level.[1]

> "Strategic foresight for public policy making is about getting foreknowledge to a public actor who wants to win a political, economic or military battle for a country"
> – Kuosa

According to Beat Habegger, there are two specific ways in which national strategic foresight contributes to public policy making: "It informs policy by becoming more systematic about relevant trends and developments in an organisation's environments; (…) and it acts as a driver of reflexive mutual social learning processes among policy-makers that stimulate the generation of common public policy visions".[2] Another way to formulate the definition is that national strategic foresight can contribute to public policymaking at three distinctive levels:

- The first level is intelligence work, where the aim is to gather systematic fore of changes of trends, and potential new emerging issues and risks that should be addressed in public strategy work.

- The second level is enhancing reflexive mutual social learning processes among policy-makers, and cutting across the traditional boundaries of policy areas and government departments, and thus incorporating societal and economic issues to health, environment or national security, in order to obtain a more holistic understanding of the public policy requirements.
- Third level is helping the public decision-makers to formulate better informed and better prepared future visions and political grand strategies.

If that statement is translated to real life, we may say that level one is better represented in national strategic foresight than level two, and again, level two seems to be better represented than level three. Hence, one could say that there is still much unused potential in strategic foresight which could be utilised in public policymaking. These issues will be discussed in the expert interviews chapters.

### *Notes*

1. Habegger, Beat (2010, 50).
2. Habegger, Beat (2010, 49).

7

# SUMMARY OF CONCEPTS

What is the most remarkable thing in the English language is the number of its descriptive futures related words. Words foresight, forecasting, prospect, probe, insight, foreknowledge, fore-thinking, vision, visionary, pre-, future-oriented, next, coming, intelligence, estimation, long-range, long-run, futures, futures thinking, futurist, futures studies, futures research, and futuring, all refer to different aspects of getting of undeterministic futures. And words such as prediction, anticipation, foreseeing, foretelling, prognosis, projection, prophesy, fortune-telling, extrapolation, oracle, animalism, shamanism, crystal ball gazing, psychic seeing, all refer to different aspects of getting "direct" of a more or less deterministic future.

To give a point of reference, in Finnish language, there are basically just five real futures words and half of them are for no serious use:

| | |
|---|---|
| *Ennakointi* | Fore-thinking, "anticipating + forecasting + scanning + reasoning + being vigilant" or in other words, "scanning to get insight, and being vigilant and ready to adapt and act based on situational awareness" which is really a vague word used basically for referring to all things in the undeterministic words group that was mentioned first as there is no other word for these things. |
| *Ennustaminen* | Prediction that refers to all things in the last group of words. |
| *Tuleva* | "Coming", which refers to one specific future and cannot be made to form the idea of futures or "coming(s)". |
| *Selvännäkeminen* | Psychic seeing |

| | |
|---|---|
| *Povaus* | Fortune-telling, which refers basically only to commercial hand reading that is done by a gypsy. Other fortune-telling is just called predicting as so many other things that have not even been mentioned yet such as astrology statements. |

Finnish futurists have to manage with just these three to five words when they speak of futures work related things. Other words can be combined to these words, which are quite pre-industrial age terms, and these words can be modified a little bit, but the lack of useful concepts is the fact which makes many things much more difficult for the futurists. When you speak of specific foresight methodology, or intuitive anticipation, or when you speak of being just "alert in vehicular traffic", you use the same word, which is "*ennakointi*". That is why Finnish futurists prefer to use English concepts as often as they can, but the problem is that people outside the futurists community do not usually know what these words stand for.

Besides these three to five real futures words of Finnish language, there are of course, a few other words which can be used with futures work words, but these are either direct loan words from English language or from other societal contexts. This list contains the words such as estimation, vision, long-time planning, surveillance, shamanism, extrapolation, projecting and prophecy. From this group, basically only estimation has a useful meaning. Hence, to be understood by the general public with Finnish words, one must speak of "being alert and ready to act", "giving estimation" or "predicting", to which one can combine genitives or words such as "coming", "next", "research", "method", "image", "surveillance" or "long-time".

The following table describes and differentiates the specific meanings of the twelve most common futures field related concepts and practises. The idea in this table is to give the three most focal functions, aims or aspects of each concept. Function A is the primary content of a concept, B is secondary, and C is tertiary. Naturally, most of the concepts and practices in the table contain many additional aspects and functions that are not mentioned here. Thus, the aim is not to give an exhaustive list of things that each concept stands for, but to give a list of each concept's viable focal points that differentiate it from the other futures field concepts.

TABLE 1
**Meaning of concepts in futures domain**

| Concept | Function A | Function B | Function C |
|---|---|---|---|
| Participatory foresight[1] = | participation | + alternatives | + insight |
| Strategic foresight = | policy orientation | + insight | + alternatives |
| Corporate foresight = | policy orientation | + vision | + insight |
| Intelligence = | insight | + predictions | + alternatives |
| Horizons scanning = | insight | + assessment | + participation |
| Technological assessment = | assessment | + participation | + planning |
| Forecasting = | assessment | + predictions | + insight |
| Predicting = | predictions | + vision | + assessment |
| Long-range planning = | planning | + assessment | + policy orientation |
| Scenarios = | alternatives | + planning | + vision |
| Futures studies = | visions | + pro-activity | + alternatives |
| Futurology = | pro-activity | + visions | + planning |

## *Note*

1. The foresight that is done for those who are not in positions to make big decisions is different from strategic foresight, and it should be called with different name. Such foresight needs to involve as many stakeholders as possible in order to launch a change from the grass-root level. Should we call that "participatory foresight"?

PART II

# Country Cases

*Fools say they learn from experience—I prefer to profit from experience of others.*

– Bismarck

*This second part of the book, titled "Country Cases", presents a few public strategic foresight systems or processes that aim to contribute to strategic policymaking in certain countries' governments. Singapore is one of the cases, as the study was done there and it was funded by the Singapore government. The rest of the case examples are from Europe, and the European Union. One key reason is the availability of good information sources. The foresight systems of the European Union countries are mapped much better, and their descriptions are available online, in comparison to other regions in the world. This is much due to the fact that some of its member states' agents such as France's General du Plan, and some individual European researchers, have been willing to map the European Union's old and new member states foresight systems for public policymaking. Hence, the focus of this country case part is both in Singapore and Europe. From Europe, Finland is especially chosen due to the reasons explained in the introduction. Therefore, we will begin by discussing the Finnish strategic foresight system and community, and proceed to the Singapore case, and then the European Union's strategic foresight system will be presented. Finally, a few of the European Union's old member states' systems for public policymaking will be mapped.*

8

# STRATEGIC FORESIGHT IN PUBLIC POLICY

## THE CASE OF FINLAND[1]

There are six more or less stabilised foresight functions or networks in Finland, which can be called the Finnish foresight system. There is no single unified top-down steered national foresight system in Finland, and never has been. Foresight functions are fragmented between many actors that are public, private, non-governmental, international or combinations of many of these types. In this sense, the Finnish "system", if we are able to call it a system at all, is very typical among developed countries. National foresight systems are always quite complex involving combinations of many overlapping functions and networks. Some systems have more top-down features, resources, direct influence, or more actors or functions than the others.

The characteristics of the Finnish foresight system is its overall flexibility, and ability to penetrate the whole society while involving so many decision-makers, ministries officials, university and sector researchers, corporate organisations, national funding agencies, and other stakeholders. The Finnish system has the following six parts:

- The Government Foresight Report
- The Government Foresight Network
- The Finnish parliament's Committee for the Future
- The Foresight consortium for labour force, competence, and educational needs
- SITRA's Foresight network
- The Finnish futures community and society

There are three main groups in Finnish strategic foresight system: functions related to the Finnish parliament, functions related to the Finnish government and functions related to the Finnish futures or futurists

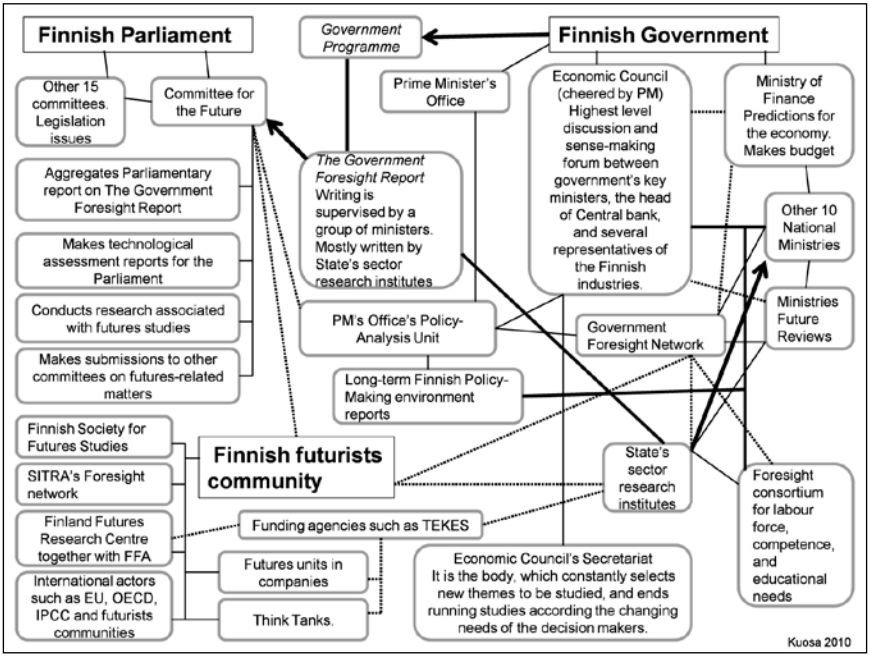
community which functions outside the government. The core of the system is the Government Programme combined with the Government Foresight Report, as it links the government and parliament's futures works together.

## The Government Foresight Report in Government Programme

Every time a new government begins its work in Finland, it writes a Government Programme[2] for its term, which is normally for four years. This highly political document defines the government's visions, objectives and the action plan to which all parties and members of the government officially commit. All decisions prepared in ministries should follow the nature of the Government Programme. One thing that is named in the last Government Programme was the theme for the Government Foresight Report.[3] It is a major report that discusses the developmental aspects of one large thematic area usually 20 to 30 years ahead in time and defines the government's vision as well as guidelines. The Prime Minister's Office's Policy-Analysis Unit is responsible for the preparation of the report, and it is supervised by a group of ministers. Subject experts in ministries and in research community are invited to join the coordination group, which is set up for the preparation. Background reports are commissioned, and they are written by the state's sector research institutes such as Government Institute for Economic Research (VATT), National Institute for Health and Welfare (THL), Technical Research Centre of Finland (VTT), Agrifood Research Finland (MTT), Statistics Finland or think tanks, etc. The next Government Foresight Report is always on a new theme, and for preparation, the Prime Minister's Office invites research institutes and Ministries' departments to join in the preparation process, in order to always have, flexibly and cost efficiently, the best experts involved in the work. This means that the preparation team is assembled according the theme of the Report.

The official role of the Government Foresight Report in the Finnish political system is to be the government's long-term visionary document that is expected to hand over to the parliament for its comments during its term.[4] Preparation of the Government Foresight Report begins with

FIGURE 3
**The Finnish public strategic foresight system**




Note: The arrows in the Figure 3 mark the directions of mandatory reporting relationships. Solid lines mark hierarchical or other direct relationships or permanent duties. Bold solid lines refer to especially strong joint function between the linked units. Dotted line describes unofficial linkage between the units, such as quite frequent information sharing or ad hoc collaboration.

a phase where government officials make the project planning work, sometimes together with external consultants and the team is nominated. The team gathers relevant background information and when needed, orders research reports. These reports are produced by state sector research institutes, other research units or think tanks. The team may also organise scenario process and public hearings. Next, the aggregative final report is drafted, and the finalised report is submitted to the parliament by the government. The Prime Minister's Office, together with the

Finnish parliament's Futures Committee begin a series of regional citizens discussion seminars and learning cafes around the country, where they introduce the report's results and gather citizens' opinions. After that, the report, together with the citizens' opinions, goes for comment to the Finnish parliament's committees. The Futures Committee is the body in the Finnish parliament that is obligated to gather the parliament's opinion on the report.

The implementation of Government Foresight normally takes a much longer time than one government's term, which means that it partly binds the work of the next government too. In principle, the government's foresight work should set the foundation for the next administration's Government Programme. Alongside with the ministries' foresight work and the parties' political programmes, the other long-term work which affects the new government's programme is the state's medium-term budget framework that is prepared in the Ministry of Finance. That framework directs new government's budget allocation more than anything else. Naturally, the Government Programme must follow the nature of the constitution as well.

The Government Foresight Report is the one that plays a formal role for the Finnish government and parliament work, but it is not the only foresight report that is prepared under the Prime Minister's Office. Besides this, the Government Foresight Network prepares a long-term Finnish Policy-Making Environment report (joint operating environment description). The third type of futures-oriented report that are done under the government are the Ministries Future Reviews. Each of the 12 ministries of Finland prepares each sector's Future Reviews at certain intervals (a year before the parliamentary elections). These reviews are vertical overviews of the emerging problems and possible solutions within the particular ministry's domain in the near future. Fourthly, the Prime Minister's Office's other units and especially its Economic Council, and the Ministry of Finance publish various futures-oriented reports every year.[5]

Each ministry prepares development projections and related strategies under its own administrative branch. The Prime Minister's Office is an intermediate body between ministries and political decision-makers.

It coordinates the collaboration, between ministries, and prepares issues and agendas for national policymaking. The principle of the foresight work under the Prime Minister's Office is to keep the work as flexible and cost-efficient as possible. The number of staff that is dedicated to foresight work in the office and in governmental ministries is very small compared to most developed countries, despite the various tasks, and multiple good quality foresight reports that are produced by the government every year.

In the system, the other foresight works besides the preparing of the Futures Report described above, proceeds where by, the Prime Minister's Office, or any ministry, orders studies from dedicated sector research institutes, or from think tanks, consulting companies or from universities, and supplements work with its own expertise. Such reviews or assessments are usually done fast in order to answer the questions regarding the issues on government's current agenda. The Economic Council's Secretariat is the body which constantly selects new themes to be studied, and ends running studies according to the changing needs of the decision-makers. This ensures that the budget allocated to foresight work in the Prime Minister's Office is always in efficient use, and does not get spent on fixed costs. The secretariat has three permanent members and several floating members, and it has strong ties to the Ministry of Finance. It is a team in the Prime Minister's Office's Policy-Analysis Unit, and it assists the Office's Economic Council, which is chaired by the Prime Minister. The Economic Council is not a decision-making body, but it is an important highest level forum comprising government's key ministers, the head of the Central bank and representatives of the Finnish industries and social partners.

## Government Foresight Network

Another large foresight process that is coordinated in the Prime Minister's Office is the Government Foresight Network.[6] It is a network between people who do, order, or coordinate anticipation work in different ministries. The network has two members from each of Finland's 12 ministries, plus the additional four secretaries, which increases the number of the members to 28. Each ministry will take turn to chair the

Network for every two-year term. The network is meant for sharing produced foresight knowledge, for discussing substance issues, and for discussing about foresight methods. The duties of the Government Foresight Network include the following:

- Addressing major-impact change factors, development trends and weak signals in cooperation with other parties involved in anticipation activities, whenever possible
- Sifting through anticipation data and drawing attention to possible overlap between the ministries' anticipation work, variations in results and blind spots
- Introducing initiatives to promote cooperation between administrative sectors
- Improving the effectiveness of anticipation data in political decision-making
- Serving as a ministerial contact forum for the preparations of the Government Foresight Report
- Preparing a joint operating environment description to be used as background material for the ministries' future reviews

## The Finnish Parliament's Committee for the Future

The Finnish parliament's Committee for the Future[7] is one of the Finnish parliament's 17 committees. It was established as the parliament's temporary committee in 1993, and it became a permanent committee in the year 2000. It has 17 members and nine vice-members plus four civil servants. Originally, the Committee for the Future was established to collect the parliament's answer to The Government Future Report once in its four-year term, but later it began to get more parliamentary duties. The Committee for the Future, however, does not have any legislative duties; it does not give parliamentary legislative reports in any matters. Instead, it only gives committee opinions to futures or technology related matters, and it does not have the right to give binding resolutions on the government's proposals or legislative bills, which all the other parliament committees have in their domains. That may result in the Committee for the Future slightly less esteemed in the eyes of ambitious politicians as compared to many others. On the other hand, it conducts research

associated with futures studies, including their methodology. The committee also functions as a parliamentary body that conducts assessments of technological development and the effects of technology on society. Like the other committees, the Committee for the Future has lots of freedom to arise endogenously new future themes to be studied, which means that a big part of its research themes are highly interesting to their members. Sometimes, the Committee for the Future grasps a new research theme that is suggested from external sources whereas in other cases, it handles themes that are submitted from other committees, but most of the time, it works with themes that its own members have raised.

The committee has been successful in raising new issues for debates in parliament sessions. It has been very active in publishing good quality technological assessments for the use of the parliament, it has organised theme seminars for the whole parliament, and it has had a good visibility in the media. Furthermore, the committee is reputed to have a great deal of informal influence in the parliament, owing to the long-term committee counsel Paula Tiihonen's ability to network the committee so well in the parliament.

The establishment of the Committee for the Future in 1992–1993 owed much to the sudden economic recession that hit Finland in the early 1990s, when almost all trade with the Soviet Union ended without warning. That came as a shock to the government and investors who had expected high growth. The government had even decided to increase the levels of social benefits in just one month before the collapse. Then the government had to save the national banks with huge and expensive foreign loans, and it was obligated to make heavy cuts on all budget lines throughout the society, including the social benefits. This tough shock combined with the coincidence that there happened to be two strong members and real promoters of forecasting in the parliament at that time, Professors Martti Tiuri and Eero Paloheimo, generated sufficient support for the establishment of the Committee for the Future.

The decision on establishing Futures Committee to the parliament could have gone differently, as there was a strong support for the so-called German model too. The principle of the German model was that parliament committees did not do foresight research or evaluations. They just ordered foresight reports from external, and then read, discussed, and

commented on the results. The supporters of that model did not think that research was the work of politicians. The advantage of the German model is the fact that the research institute is impartial, non-political, and can provide information to all parliament committees without considering sensitive domain or territory issues between the committees, for instance.

The unique thing in the Finnish system's Committee for the Future is that it aims to get beneath the day-to-day politics' and parties' views to the roots and seeds of emerging issues. Usually the committee has been successful in this. One of the very few cases when the committee has been obliged to vote its view was the question of establishment of new nuclear energy reactors in Finland. That question was too politicised to be studied and argument impartially.

Another unique feature in the committee is the fact that its members really get involved in the preparatory work and research projects that are undertaken in the committee, and they aim to use scientific arguments, instead of political. The idea is that when a politician works with the theme, he/she learns about the subject and is able to come up with better questions and decisions. The minimum level of a politician's involvement in the committee is that they participate in the projects' steering groups' work and state their comments on the reports. In best cases, they use foresight methods in the study and write the entire chapters on the studies. The combination in which an impartial researcher of certain sector works in collaboration with a politician is said to be fruitful in digging into matters that are both novel and have political dimensions. The existence of a committee in the parliament with such an active participation on approach is really unique in the world. There have been attempts to establish something similar in other countries, but so far, none of the attempts have prevailed.

## The Foresight Consortium for Labour Force, Competence and Educational Needs

The Ministers' Group of Finnish Work, Entrepreneurship, and Labour Markets decided to establish the Foresight consortium for labour force, competence and educational needs in 18 April 2008.[8] The idea of the

Foresight consortium was to establish a mutual foresight system for coordinating all of the Finnish government actors' decision-making regarding vocational education and labour markets competence needs issues. The steering of the system's work is divided between the Ministry of Employment and the Economy, and the Ministry of Education. The domain of the Ministry of Employment and the Economy contains both the short-term foresight of the competence and educational needs, and the labour force needs foresight, in general. The domain of the Ministry of Education contains the foresight of the competence and educational needs in the medium and long term.

The foresight system orders its basic forecasts and input data of the labour markets and economy from the Government Institute for Economic Research (VATT). That data is further broken down for use in the regional level, in different administrative fields, and it is also utilised in the work of the Government Foresight Network, and in the Government Future Report writing. Next VATT's forecasts are complemented with other organisations' development forecasts, and corporative organisations are participating in the foresight especially regarding fields that are facing remarkable structural changes. The biggest challenge here is to merge the quantitative forecasts to qualitative foresight into one storyline.

The consortium says in its statement, that from now onwards, they should start regulating the national foresight activities, due to its big societal importance. As a solution, the consortium suggests that foresight work should be added to the list of government's regulations, and that the ministries' responsibilities regarding foresight should be defined clearly.

## SITRA's National Foresight Network

The Finnish Innovation Fund (SITRA),[9] was set up in conjunction with the Bank of Finland in 1967 in honour of the 50th anniversary of Finnish's independence. Today, it is an independent public fund that, under the supervision of the Finnish parliament, promotes the welfare of the Finnish society. SITRA has concentrated its activities in programmes, and it aims to grasp trans-societal challenges, with an emphasis on Finland's future. The strengths of SITRA are in its independence, ability to react

quickly and its powerful networking ability between public and private stakeholders.

SITRA's core objectives, as a national development fund, are to enhance the Finnish innovation system and the national competitiveness. According to SITRA, the challenges that Finland faces are taken under discussion and subjected to closer examination in its work, in order to promote innovation activities that provide the necessary answers to the challenges. The goal of the cooperation between many public, private, NGOs and universities stakeholders is to promote the long-term perspective in Finnish decision-making and to improve the society's ability for a controlled structural renewal.

SITRA's working for the Future goes through the following themes:

- Foresight (including the National Foresight Network)
- Strategy processes
- Development programmes and decision-makers' training
- Strategic research
- Design strategies
- Working for the information society

The National Foresight Network, as a part of the foresight work in SITRA, has two primary modes of operation:

- Subject matter experts and policymakers gather together in thematic groups to identify and closely examine change drivers that are relevant to Finland.
- The Foresight.fi website, launched in December 2008, aggregates together foresight insights and relevant information from Finland and abroad.

However, from the point of view of public decision-making, SITRA's National Foresight Network has not produced much foresight material or comments that would have been utilised, e.g. in Government Future report work. The SITRA's National Foresight Network is said to be more of a discussion and a sharing network than a policymaking network. In this sense, the biggest influence on national policies that the network exercises comes from its influences on the SITRA's development programmes.

## Finnish Futurists or Futures Community and Society Together with FFA and FFRC

The sixth largest part of the Finnish foresight system are the various futurists' or futures-oriented people's networks in Finland. The biggest and most organised network among these is the Finnish Society for Futures studies,[10] which was established in 1980 based on the recommendation of the government's Central Board of Research Councils. 14 Finnish institutions of higher education were the founding members, and since then, 14 additional institutions and over 700 individuals have joined the society.

Another large network functions under the Finland Futures Academy (FFA),[11] is a national education and research network in the field of futures studies for universities. FFA has a nine member universities that produces futures education modules. The network is coordinated by the University of Turku's School of Economics' Finland Futures Research Centre (FFRC),[12] where the national Masters programme and postgraduate school in futures studies have been based. FFRC is the biggest foresight and futures studies actor in the Nordic countries, and among the biggest in the world. It was established at Turku School of Economics in 1992, where it has functioned as an external funding research centre with very little direct public funding. The project funding of FFRC comes from various types of customer projects, which are mostly funded by national development funds or by the European Union. The annual number of staff and projects in FFRC is around 50 at the end of the first decade of the new millennium. The centre's academic research focuses mainly on such themes as foresight in development projects, environmental and energy research, innovations, social and cultural research and research on creative industries. Despite the FFRC's large influence on Finnish futurists community and its international reputation, FFRC has done very few strategic foresight processes for companies or for ministries. Such projects are usually ordered from various small Finnish consultation companies that offer services in foresight. Hence, the direct influence of FFRC's work to the public policymaking has been mostly limited to a few research reports writing which have been utilised in some level in ministries, and to the fact that the Centre's researchers

are invited to speak quite regularly at the Finnish parliament's Committee for the Future. Centre's researchers are sometimes also interviewed by the television news, or they have participated in educational television programmes, which may have had some influence on the public policy-making as well.

Along with such formal networks communities or centres, there are several less structured networks in Finland too, which are partly overlapping with the previously mentioned networks. These can be simply named as the scientific community of futurist, foresight experts and practitioner's community, ministries' and other public institutions' foresight oriented people network, network of politicians, and network of citizens' debate participants.

## Summary of the Finnish Case

To sum up the Finnish public foresight to the framework that strategic foresight processes usually follow, we get the following descriptions:

- Guiding rule: Government programme which is a political document that sets themes to be studied in ministries and in Future reports. The Prime Minister's Office coordinates and establishes research teams flexibly according the changing needs.
- Input: Sector research institutes and ministries produce the information regarding their sectors whereas other stakeholders contribute further.
- Analysis: Sector research institutes produce ordered forecasts. Ministries produce Ministries' Reviews (sectoral).
- Interpretations: In government – Preparing the Prime Minister's Future reports (horizontal), the policymaking environment report, and the Government Future Network. In parliament – the parliament's Futures Committee's opinions and technology assessments, together with other committees' work and citizens' debate.
- Prospections: Scenarios in the Prime Minister Office's Futures report. Some "what-if" questions come from the Ministries' Reviews (sectoral).
- Output: Stakeholders are committed, options are discussed in all levels, and a stronger networking.

- Strategy: Options go to the Prime Minister's Economical Council, to special ministry groups that steer government programmes, to political parties, and to the parliaments committees. Influence on national budget, which is made in the Ministry of Finance is indirect via the EC and the government network and programmes.

### *Notes*

1. This chapter bases on the interviews of Riitta Kirjavainen, Counsellor, Finland Prime minister's office; Jyrki Kasvi, the long-term vice-cheer of the Committee for the Future, and its long-term Senior advisor Osmo Kuusi.
2. The Government Programme is an action plan agreed by the parties represented in the government and it sets out the main functions of the government. Government Programme of Prime Minister Mari Kiviniemi's government was submitted to the parliament in the form of a government statement on 22 June 2010. The government will proceed with the implementation of decisions of Matti Vanhanen's second government, Government Programme and the Mid-Term Policy Review. See http://www.vn.fi/tietoarkisto/aiemmat-hallitukset/vanhanenII/hallitusohjelma/pdf/en.pdf / http://www.vn.fi/hallitus/hallitusohjelma/pdf/en.pdf
3. The Government Foresight Reports are academic reports which discuss the long-term development aspects of one thematic area usually 20 to 30 years ahead in time. The government adopted in October 2009 the Foresight Report on Long-term Climate and Energy Policy. Setting a target to reduce Finland's greenhouse gas emissions by at least 80 per cent from the 1990 level by 2050 as part of an international effort, the report marks out the road to a low-carbon Finland in 2050. http://www.vnk.fi/julkaisukansio/2009/j28-ilmasto-selonteko-j29-klimat-framtidsredogoerelse-j30-climate_/pdf/en.pdf
4. If the government changes during a parliamentary term of four years, the Future report is not changed due to that. It will still be the standing government's Future Report.
5. Prime Minister's Office's foresight publications are available in English in: http://www.vnk.fi/julkaisut/julkaisusarja/en.jsp. See the latest: http://www.vnk.fi/julkaisukansio/2010/j11-suomi-2010/pdf/en.pdf; http://vnk.fi/julkaisukansio/2009/j33-yhdessa-ja-erikseen-j03-together/pdf/en.pdf
6. http://www.valtioneuvosto.fi/toiminta/ennakointiverkosto/en.jsp

7. This subchapter bases on the interviews of Jyrki Kasvi, the long-term vice-cheer of the Committee for the Future, and its long-term senior advisor Osmo Kuusi. See the web page: http://web.eduskunta.fi/Resource.phx/parliament/committees/future.htx
8. http://www.minedu.fi/export/sites/default/OPM/Koulutus/koulutuspolitiikka/ennakointi/liitteet/yhteistyoryhmanasettaminen18042008.pdf; http://www.tem.fi/files/27163/TEM_39_2010_netti.pdf
9. Foresight: http://www.foresight.fi/info-in-english/; http://www.sitra.fi/en/Working+for+the+Future/foresight/foresight.htm
10. Futura society: http://www.futurasociety.fi/
11. FFA: http://www.tvanet.fi/default_eng.asp
12. FFRC: http://www.tse.fi/EN/units/specialunits/ffrc/Pages/default.aspx

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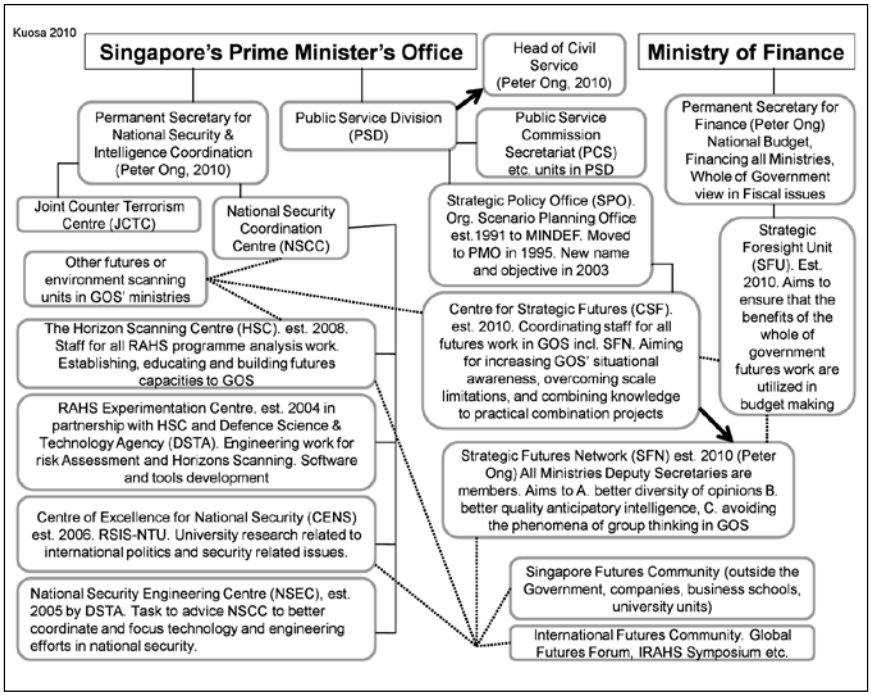
# STRATEGIC FORESIGHT IN PUBLIC POLICY

## THE CASE OF SINGAPORE

The evolution of the Singaporean strategic foresight began in 1991 from the establishment of Risk Detection and Scenario Planning Office in the Ministry of Defence in 1991. In 1995, it was shifted to the Prime Minister's Office's Public Service Division (PSD). In 2003, it acquired new objectives and a new name: Strategic Policy Office. The next big steps in the evolution of Singaporean strategic foresight were the establishment of Risk Assessment and Horizons Scanning Programme (RAHS) in 2004, and Horizon Scanning Centre (HSC) in 2008 as can be seen in Figure 5. After the pace of distributing foresight units, functions or capabilities across the government of Singapore speeded up significantly leading to the need to establish the Strategic Futures Network (SFN) for coordination and collaboration between all the new foresight units.

Most of the Singapore government's foresight functions are located under the Prime Minister's Office. These functions are mainly under the Permanent Secretaries for National Security & Intelligence Coordination (NSIC) and the Public Service Division (PSD), which has the role of supporting the whole of government policymaking coordination. Under NSIC and its National Security Coordination Centre (NSCC),[1] the main foresight coordinating body is the Horizon Scanning Centre (HSC), which was established in 2008. Under Public Service Division (PSD) and its Strategic Policy Office (SPO), the main coordinating agent for foresight functions is the Centre for Strategic Futures (CSF), which was established in 2010. Besides the CSF, the Strategic Futures Network (SFN) was established in SPO at the same time. CSF functions as a high level network for futures thinking within the whole of the public sector.

FIGURE 4
**Singaporean public strategic foresight system**




Note: The arrows in the Figure 4 mark the directions of mandatory reporting relationships. Solid lines mark hierarchical or other direct relationships or permanent duties. Dotted line describes in-official linkage between the units, such as quite frequent information sharing or ad hoc collaboration.

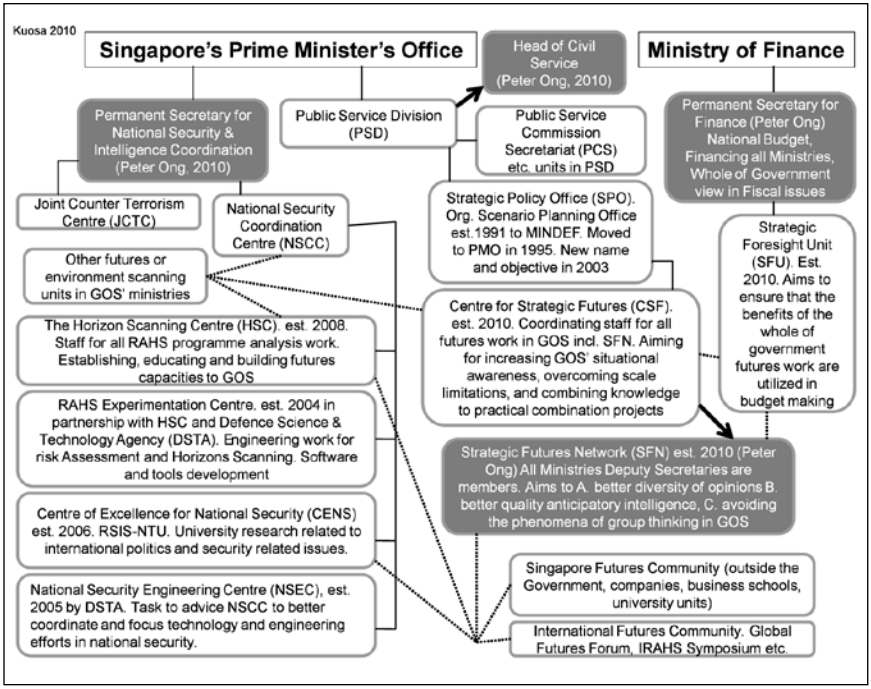
SFN is coordinated by the head of the civil service, who has the overall responsibility of supporting the whole government approach.

At the time of writing, the SFN has been in place only for a short while, but has already reported the following practical benefits. First, is the raising situational awareness within whole of government of what each futures unit is responsible for. Second, by encouraging futures units to come together, it helps to achieve critical mass for training and learning activities. Third, it allows for a greater scope for combination of

projects where ministries recognise through situational awareness their common interests even if it comes from different perspectives, and then, work together to achieve better outcomes than what they would have done by tackling the problem alone.

Along with the Prime Minister's Office's NSIC and PSD, the Ministry of Finance is known in the government as the central agency as it has a role in supporting the overall government's approach in financial matters. In 2010, the Ministry of Finance established a Strategic Foresight Unit[2] or SFU to ensure that the benefits of the whole of government futures thinking, namely improved situational awareness, diversity of thinking and avoiding the phenomena of group thinking, are utilised in the Ministry of Finance's long-term budget considerations.

FIGURE 5
**Strong node in Singaporean public strategic foresight system**



As the case in most countries, there are two spheres in the futures community in Singapore. Firstly, the futures community within the government is well-developed and has distributed capabilities across the whole of government. Secondly, the futures community that is non-government is far less developed as Singapore does not have any dedicated private futures entities. However, there are institutions, such as RSIS, that collaborate with government futures units to study particular issues such as regional security from a futures perspective. There are also several notable individuals in academia and in private companies who are in leading positions and who have to make decisions regarding the future. CSF is a part of the government's attempt to incorporate them in the forum of a free-flowing dialogue so that both private and public sectors can share their thoughts regarding mutual interests.

What is really significant about the Singaporean strategic foresight system is its strong centrally steered orientation, that is combined to pursue, to distribute and contextually differentiate foresight functions across all ministries, as can be seen in the figure. Practically all Singaporean public foresight functions are linked directly to the Singapore government's leading official, the Head of Civil Service, Mr. Peter Ong, who succeeded Mr. Peter Ho in this post since 1 September 2010. As the key node of Singapore's strategic foresight system, Mr. Ong is also the Permanent Secretary of Finance, Permanent Secretary of National Security and Intelligence Coordination,[3] and he chairs both the Strategic Futures Network (SFN), and The Committee of Permanent Secretaries, to which all the Ministries Permanent Secretaries belong. This practice enables good sharing and collaboration between the growing number of public foresight units in Singapore, and it verifies that foresight work can influence the whole of government decision-making.

## *Notes*

1. NSCC and its supporting centres: http://app.nscs.gov.sg/public/content.aspx?sid=28
2. Strategic Foresight Unit in Ministry of Finance: http://app.sgdi.gov.sg/listing_expand.asp?agency_subtype=dept&agency_id=0000001005
3. In first of September 2010 Mr. Peter Ong, the standing Permanent

secretary of Finance, was appointed the whole of Singapore government's Head of Civil Service (Permanent secretary, special duties), and also Permanent secretary of National Security and Intelligence Coordination. In the duties he is following his predecessor Peter Ho. See http://app.psd.gov.sg/data/Press%20release%20-%20Appointment%20of%20HCS%20and%20PS.pdf.

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# STRATEGIC FORESIGHT IN PUBLIC POLICY

## THE CASE OF THE EUROPEAN UNION

Foresight and futures work in the European Union has grown significantly in the past 20 years. Most European Union member states have undertaken national foresight exercises in some form. In the European Union government, foresight has steadily gained some institutional structures as well. There are several small units within the government, such as the former science and technology Foresight Unit within the EU Directorate General for Research,[1] foresight work within the Institute for Prospective Technological Studies, and the DIUS in the U.K. There are also some institutional networks in the EU government, such as the European Parliamentary Technology Assessment (EPTA),[2] a network of parliamentary and other organisations that includes foresight among its activities examining the impact of new technologies. The European Commission has also the Joint Research Centre (JRC) which has seven joint scientific institutes that are located at five different sites in Europe: Geel (BE), Ispra (IT), Karlsruhe (DE), Petten (NL) and Seville (ES). JRC's Directorate-General is located in Brussels in Belgium. The JRC provides independent scientific and technical advice to the European Commission and Member States of the European Union in support of EU policies.[3] Among the JRC joint research institutes, the Institute for Prospective Technological Studies (IPTS)[4] based in Seville plays a major role in foresight in the EU through the Foresight for the European Research Area (FORERA) team. The IPTS has hosted three international seminars on future-oriented technology analysis, and it was involved in the development of, and hosts, the online guide to foresight, that is part of Forlearn,[5] a continually developing resource for those wishing to undertake a foresight exercise. The guide outlines the

reasons for doing foresight and the issues involved in setting up, running (including guidance on methods), and following up a project.[6] The IPTS's strategic foresight system which merges horizons scanning into funnelling the emerging issues into trends which should be tackled in policymaking, has not only been utilised in the EU, but it has been also adopted to Singapore's strategic foresight system, where it is used as the basic model of the Singapore's Emerging Strategic Issues Project (SESIP).

Although there are a number of small foresight units and institutional networks within the EU government, most of the EU's foresight work has taken the form of funded projects such as the EU's large Framework Programmes,[7] which are run over a number of years by external contractors, leading to the publication of reports, guides and toolkits. These have been undertaken by a growing number of university departments, research institutes and consultancies that have in the process developed capabilities in foresight and produced several guides in the use of futures methods and techniques.[8]

The European Foresight Monitoring Network (EFMN)[9] is the EU's ongoing project for monitoring its foresight activities. Its website provides a search data base, and tools to search foresight activities not only in Europe but worldwide too. In the webpage, the initiatives can be searched by basic details, such as title and country; a series of drop down menus under research area, industry, market, audience, output and sponsor; and a further drop down menu that includes 31 different foresight methods. In 2009, the EFMN website listed 1,916 foresight initiatives in EU area. EFMN contributes to Forsociety[10] and Forlearn,[11] which aim to provide a sharing platform for foresight practitioners and policymakers in the EU.

To give examples of the most notable foresight projects that have been funded in the EU's large Framework Programmes, we can mention COST Action 22: Advancing Foresight Methodologies[12] (2004–2007), which focused specifically on foresight methodology. COST Action 22 brought together a highly international group that included individuals with backgrounds in futures and sustainability and the environment.

Another example is ERA-Net,[13] which was a sustainable and dynamic network that aimed to build a close relationship between Foresight in

the EU and within its member states. In ERA-Net national foresight programme, managers coordinate their activities and—on the basis of shared on relevant issues, methodologies, legal and financial frameworks—regularly develop and implement efficient transnational foresight programmes that significantly enrich both the national and the European research and innovation systems.

The objective of the third example, Futures for Regional Development (FUTURREG),[14] was to create a regional policymaking futures toolkit, based on previous projects carried out by the international partners of the project. The Toolkit includes guidance on which tools and approaches may be appropriate according to regional objectives, resources and priorities. It was also developed for wider use in other EU regions. Regions and their public authorities are meant to be able to use the FUTURREG futures tools to deal with important challenges and trends intelligently and strategically.

One of the most ambitious foresight and horizons scanning project under European Commission's framework programmes is a blue sky research project Interconnecting (iKNOW). iKNOW intends to become a cornerstone for ongoing and future horizon scanning, foresight and forward-looking activities in Europe—advancing, tools and capacities for the analysis and use of WI-WE approaches. In particular, iKNOW has developed conceptual and methodological frameworks to identify, classify, cluster and analyse wild cards and weak signals and assess their implications for, and potential impacts on, Europe and the world. As a result, iKNOW puts forward a novel "horizon scanning 2.0" approach which, on the one hand, promotes participatory and bottom-up scanning supported by web 2.0 technologies, and, on the other hand, improves information collection, filtering, communication and exploitation.[15]

Graham H. May has made an assessment of the potential influence of the various foresight activities on the EU's policymaking. He notes that although in terms of futures and foresight, the recent increase in foresight activities has been important, they are small in relation to the activity of both the EU and its member states. Although it is difficult to assess precisely how much influence recent foresight activities have had on the day-to-day work of government, it seems likely that foresight

is seen mainly as an additional activity in policymaking, leaving little imprint directly on EU policies. May concludes,

> Despite this extensive practical experience, there has been little development in the academic sector of theoretical understanding or education and training in futures. There is a little real appreciation of what foresight can and cannot be expected to do, or of critical evaluation of the results, apart from some reviews of national foresight studies with the danger that unrealistic expectations of its capabilities will be disappointed and its value doubted. The growth of foresight and related futures work in Europe has occurred during a period of economic prosperity and growing public expenditure but it may not be sustainable as unrealistic expectations fail to be fulfilled and public spending in the recession is cut back and foresight seen as an expendable luxury. The last 15 years will then prove to be an exception rather than the beginning of the embedding of foresight into society.[16]

## *Notes*

1. http://costa22.org.
2. European Parliamentary Technology Assessment (www.eptanetwork.org/EPTA/index.php).
3. http://ec.europa.eu/dgs/jrc/index.cfm; http://en.wikipedia.org/wiki/Joint_Research_Centre_(European_Commission).
4. Institute for Prospective Technological Studies (http://forera.jrc.es/).
5. http://forlearn.jrc.ec.europa.eu/guide/0_home/index.htm.
6. http://forera.jrc.es/fta/intro.html; May, Graham H. (2009, 58).
7. At the Community level, the European Union (see http://cordis.europa.eu/home_en.html) possesses three key funding instruments to support research and innovation: Cohesion policy which is funded through the Structural Funds and Cohesion Fund; the Research Framework Programme and the Competitiveness and Innovation Framework Programme. From point of view of foresight research funding, the framework programmes are the key funding element. For instance the 7th Framework Programme (2007–2013) funds almost all main sectors of research and society (see http://cordis.europa.eu/fp7/home_en.html). The EU Research Framework Programmes were explicitly designed to support the creation of "unified" European Research Area (ERA), according

the European Commission's strategic grand plan *Towards a European Research Area* of January 2000.

8. May, Graham H. (2009, 63).
9. European Foresight Monitoring Network (www.efmn.info/).
10. Forsociety (www.eranet-forsociety.net/ForSociety/index.html).
11. Forlearn (http://forlearn.jrc.es/index.htm).
12. http://costa22.org.
13. www.eranet-forsociety.net/ForSociety/index.html.
14. http://www.interreg3c.net/sixcms/detail.php?id=8109.
15. WI-WE Bank: http://wiwe.iknowfutures.eu/; iKnow Community: http://community.iknowfutures.eu/#1.
16. May, Graham H. (2009, 65).

# 11

# FORESIGHT SYSTEMS OF OLD MEMBER STATES OF THE EUROPEAN UNION

The European Union has 27 member states. The 15 states that were members of the union prior to its last large enlargement round in 2004 are called the EU's old member states, and the 12 states that joined the union during or after that are called the EU's new member states. The national foresight systems of a few of these old member states[1] are presented next. Finland, one of the old member states, has already been presented.

## The United Kingdom Foresight System

One of the most well-known foresight systems or programmes in Europe is the U.K. government's Foresight Programme. The U.K. Foresight Programme is considered to be effective in informing strategic policymaking in the British government. While it was initially centred on science and technology policy—and still places a strong emphasis on these issues—it has continually broadened its scope and today, it provides policymakers with a perspective on the full public policy agenda. The Programme covers the whole spectrum of a comprehensive foresight process—from early detection and the generation of foresight to the development of policy options—it links expert to a long-term perspective, and employs sophisticated techniques of futures analysis to raise the government's strategic policymaking capacity.[2]

According to Ian Miles,[3] the early roots of the U.K. Foresight Programme go back to the 1960s, when a new focus on science and technology policy addressed the widely recognised innovation problem in the U.K. The emergence of information technology and the necessity of increased investments in research and development forced policymakers

to make choices between competing demands and to set the right priorities in light of the country's economic requirements. In the early 1990s, four academic and private institutions were commissioned to develop methodologies to identify and prioritise emerging technologies of importance to the U.K. The resulting vision of "key technologies" paved the way to what in 1994 to become the U.K. Foresight Programme. The programme operates under the Government Office of Science, and one of the key functions of it is the U.K. Horizon Scanning Centre (HSC).[4] HSC began to work in December 2004 and aims to "feed directly into cross-government priority setting and strategy formation, improving government's capacity to deal with cross-departmental and multi-disciplinary challenges".[5]

According to Habegger, the U.K. Foresight Programme can roughly be grouped into three distinct programmes or activities: the horizon scans, the futures projects, and the public outreach programme.[6] In horizon scanning, there are two complementary programmes, the Delta Scan and the Sigma Scan, which provide an inter-sectoral informational basis to underpin all foresight activities across the U.K. government. These ongoing scans look ahead over a range of up to 50 years to uncover "contradictions and ambiguities in mapping the turbulence of change".[7] The Delta Scan, with more than 250 science and technology experts as contributors, gives an overview of future S&T issues. The Sigma Scan is a synthesis of other horizon scanning sources that may be characterised as a "scan of scans" and covers trends across the full public policy agenda. It draws its information from think tanks, corporate foresight, governments, academia, NGOs, blogs, mainstream media, or music, depicting the diversity of potential information sources.[8]

The second main element of the U.K. Foresight Programme[9] is the rolling programme of three or four futures projects to create high-quality overviews of a given issue and to develop a vision of how the U.K. can meet the associated future challenges. All futures projects should have a longer-term impact by raising awareness, offering policy recommendations, and establishing networks among professionals within and outside of government who can translate the recommendations into policy. The projects last between 18 to 24 months, and they must also either deal

with some important current issue that science, technology, the social sciences, and economics can help to address, or with a current aspect of science or technology that is likely to have a wider potential in the future.

Each of the projects needs a sponsoring minister to ensure high-level political backing, and is thus, chaired by the minister of the lead department, and led by senior decision-makers from relevant departments, research bodies, and other organisations. Projects will only started when support from all relevant stakeholders is guaranteed, and thus, a high-level stakeholder group oversees each project. A steering group invites between 90 and 120 scientists from different disciplines to join in the project in order to review the scientific literature extensively and to participate in workshops or seminars. The ultimate objective is to produce a set of clear, comprehensive, and comprehensible project reports, often rewritten by specialised scientific writers to make them accessible to all the interdisciplinary team members.[10]

The third pillar of the Foresight Programme is a broad public outreach that builds networks of futures thinkers and practitioners in the public, private, academic, and other sectors. The HSC established the Futures Analysts' Network (FAN Club) as a forum where those who have an interest in horizon scanning and futures analysis can meet to exchange new ideas, innovative thinking, and best practices.

## The France Foresight System

The French foresight emerged soon after foresight started to expand outside the U.S. military in the early 1960s. Hence, the French foresight has a very long history even in the international context. However, owing to the language barrier, the French foresight is not as well-known to the international community as the foresight of many other countries. Today, the French strategic foresight system has three strong pillars: the Strategic Analysis Centre, DATAR and Futuribles.[11]

The Strategic Analysis Centre (Centre d'Analyse Stratégique)[12] is a decision-making and expertise institution which aims to advise the government in the creation and application of economic, social, environmental and cultural policy, and it provides forecasts for major governmental reforms. On its own initiative, it carries out studies and analysis as part of

an annual working programme. It gives particular attention to the European dimension of the questions it examines. It was established by decree on 6 March 2006, and it operates under the Prime Minister's Office in Paris. It is the successor to the Commissariat général du Plan,[13] which was established by Jean Monnet and Charles de Gaulle in 1945–1946.[14] According to Jacques Richardson,[15] the reason for the establishment of the Plan was that de Gaulle and Monnet both believed that such an institution was essential in the rebuilding of a nation wrecked by war and deprived of normal economic intercourse for a half-dozen years. From the beginning, the Plan operated for 60 years almost consistently under the prime minister's direct tutelage, theoretically in close coordination with the parliament, other ministries (notably Budget, regional planning, education, industry), senior civil administrators in France's 22 regions, semi-autonomous governmental entities such as the National Scientific Research Centre (CNRS), and leaders of labour and the manufacturing and service sectors. At its peak, the Plan employed over 150 persons.

In 2006, the plan was replaced with the Strategic Analysis Centre by Prime Minister Dominique de Villepin, who declared that France needed an expertise which was both quick and immediately operational, and which served better for the republic's executive arm, especially on questions of mid-term and long-term strategies, as they lived in a world that was increasingly complex.

DATAR[16] (Délégation à l'Aménagement du Territoire et à l'Action Régionale) is a half publicly-funded regional foresight and policy agency of France, which was established in 1963. It focuses on the regional aspects of the national economic plans and it stimulates, guides and coordinates the regional planning efforts of other agencies. DATAR has various large networking programmes; it also developed a network of information offices outside of France to encourage foreign investment in France. In recent years, DATAR has employed about 100 people.

Futuribles[17] is divided into three divisions: Futuribles Press, Futuribles International, and Futuribles Research and Consulting. Futuribles Press publishes two monthly publications: Futuribles Journal and Futuribles Newsletter. The journal was established in 1975, and its monthly printing is 6000–8000 copies (40% goes to foreign countries). Futuribles

International (formerly known as Association Internationale Futuribles) is a Paris-based international, independent, private non-profit organisation network or society on future studies. It works as a research centre, multi-sectoral discussion forum, education centre, and a data bank. It was created in 1960 by Bertrand de Jouvenel while the "Centre d'études prospectives" was created by Gaston Berger in 1957. The Futuribles Research and Consulting centre employs 15 people and holds a research network of 200 experts. It focuses on foresight, research and consulting in almost all societal sectors, and it provides an online databank.

## The Germany Foresight System

Germany does not have any centrally steered planning offices or systems for coordination of foresight projects. Instead, it has a fragmented system with many publicly supported and funded independent organisations located outside of governmental structures, many ad-hoc committees and scientific councils reporting to the ministries dealing with arising problems.[18] At the federal level, the major ministries have departments, observatories or scientific councils that can manage these evaluative, futures or strategic studies. For example, the Ministry of Economy includes an Economic Policy Division that carries out analyses and forecasts. It is also worth mentioning the Bundesinstitute and Bundesanstalten that are widely recognised official evaluation institutions involved in different fields of public management: approval, certification, labelling, research, forecasting, futures studies, advice, as well as carrying out executive tasks for the ministries.[19]

According to Bruno Herault,[20] over the last 20 years, the German federal system has increased the haggling among central and regional authorities. The outcome is that the latter has learned to use all the strategies available to them to obtain a maximum amount of subsidies. The tools have been carrying out both territorial diagnoses and regional futures studies. Hence, Germany includes numerous public and decentralised sources of futures studies, but it has a poor tradition of public planning. Therefore, Germany has always produced more "forecasts" than "futures studies", says Herault.

Probably the best-known strategic foresight structure in Germany is

the council of the Five Wise Men (Sachversta¨ndigenrat zur Begutachtung der gesamtwirtschaftlichen Entwicklung, Bundesministerium fu¨ r Wirtschaft),[21] which was created by decree in 1963. It plays a role similar to that of the Economic Analysis Council in France (CAE – Conseil d'analyse e'conomique), but it differs in size, as it has only five experts, despite its years of existence (41 years compared with six years), and in method (a search for consensus rather than comparing analyses). According to Herault, it is given the mandate of periodically evaluating the German economy from every angle, and it takes in the form of an academic authority that advises the government and the parliament on economic policy issues. Every year, the five university experts present a report on the "overall economic situation" and its "foreseeable evolution" to the Chancellor, while highlighting the "risks" that are appearing and the possibilities of controlling them. The report includes a diagnosis, a part devoted to short-term forecasting and developments concerning future public policy challenges. The council is also tasked with assisting policymakers at all levels (local, regional and federal), and helping the general public to have access to "reliable information on economic matters".[22]

## The Netherlands Foresight System

Unlike many other countries such as Germany, Netherlands has a standing central planning agency under the government. The CPB Netherlands Bureau for Economic Policy Analysis (Centraal Planbureau, Central Planning Bureau) was founded in 1945. CPB is funded by the Dutch government, but it works as an independent agency. To ensure its independence, CPB conducts its analyses free of charge. CPB is allowed to work only for a certain group of clients, and it is obliged to turn down the requests when clients offer to pay for the research.[23]

The objective of CPB is to make independent economic analyses that are both scientifically sound and up-to-date, and relevant for policymaking in the Netherlands. With its analyses, CPB informs not only politicians and policymakers but also societal organisations, the scientific community and the general public. CPB conducts its research on its own initiative, as well as upon request by a limited group. Within this group are the Cabinet, government ministries, the parliament, individual

members or factions of the parliament, and political parties (parties in office, as well as opposition parties). Also able to call on CPB's research efforts are employers' and employees' organisations, the Social Economic Council and several other institutes and organisations in the field of social economic policy and research. Formally, the Minister of Economic Affairs decides whether or not CPB will answer a particular request, or it may determine that CPB may participate only to the extent that the request fits within CPB's common activities.[24]

Alongside with CPB, the Dutch government has three other planning offices: the Social and Cultural Planning Office (SCP), the Netherlands Environmental Assessment Agency (MNP), and the Spatial Planning Office (RPB).

According to Barend van der Meulen, the Netherlands' foresight in science and technology has developed along three lines of science and technology policy. The first line is that of standing panels (so-called the advisory sector councils for research) that have a tripartite composition of researchers, research users and government officials. The main task of these panels is to advise ministries on their sector science policies by taking future societal developments and scientific possibilities into account. The second line is that of technology policy. During the 1980s, the Ministry of Economic Affairs, which is responsible for technology policy, developed foresight studies in order to identify critical technologies for the Dutch's small and medium enterprises (SMEs) and help them to adopt these technologies.[25] The third line is that of science policy for the sciences. In 1992, the Minister of Education and Sciences established a Foresight Steering Committee to coordinate and initiate foresight studies and advise the minister on the consequences for science policy. The Foresight Steering Committee adopted the scenario approach developed by Group Planning of the Shell Company as well as continued the science policy tradition of disciplinary panels. From 1992 to 1996, the Dutch Foresight Steering Committee initiated and coordinated a range of foresight studies in science and technology. During spring of 1996, the committee published its final report in which it selected ten research themes that were found crucial to develop in order to anticipate the future need of expertise in the Netherlands.[26]

One of the most ambitious foresight initiatives in the Netherlands has been its Horizon Scan 2007[27] project under the Commission for Consultation of Sector Councils (COS) which formulates priorities for society-oriented research, focusing in particular on those experts dealing with cross-sector subjects at the interface of policy domains and scientific disciplines. Horizon Scan 2007 project was carried out by a specially established team consisting of representatives from research, society, industry, government, and think tanks from the Netherlands.[28]

However, according to Habegger, as the Netherlands Horizon Scanning Project's strategic scan provided a very broad and valuable input for policymaking by identifying, assessing, and clustering future trends, issues, and developments, the decision-makers wanted to continue the project.[29] Hence, when the final report of Horizon Scan 2007 was published in 2007, the project was no longer expected to remain a one-time measure: in February 2008, the tasks of the COS were transferred to the Directorate of the Netherlands Ministry of Education, Culture and Science, and it is foreseen to create a permanent facility outside the ministry.[30]

### *Notes*

1. The systems of all 15 old member states are not discussed here, as there has not been sufficient studies of all the systems available. Systems of U.K, France, Germany, Netherlands, Sweden, Finland and Ireland are presented, and systems of Belgium, Luxembourg, Denmark and Mediterranean countries are not. However, it should be notices that there are many public foresight functions in the list of countries that are not thoroughly discussed. For instance Belgia has its Federal Planning Office in the Brussels, which is the capital of both Belgium and EU, Denmark has among else e.g. its already old Copenhagen Institute for Futures Studies, and Spain, Greece, Portugal and Italy have many foresight functions too.
2. Habegger, Beat (2010, 54).
3. Miles, Ian (2005): U.K. foresight: three cycles on a highway. *International Journal of Foresight and Innovation Policy* 2 (1) (2005), pp. 2–7.
4. http://horizonscanning.defra.gov.uk/; www.hse.gov.uk/horizons; U.K. Foresight Programme and Horizon Scanning Centre (www.foresight.gov.uk/index.html).

5. United Kingdom HM Treasury, Science and Innovation Investment Framework 2004–2014, London, 2004. http://www.hm-treasury.gov.uk/spending_sr04_science.htm.
6. www.sigmascan.org; www.deltascan.org. The Delta Scan is an overview of future science and technology issues and trends, with contributions by over 200 science and technology experts from the worlds of government, business, academia and communication in the U.K. and the U.S.
7. Schultz, Wendy L. (2006).
8. Habegger, Beat (2010, 53).
9. Miles, Ian (2005, 17); Habegger, Beat (2010, 53).
10. Ibid.
11. http://www.ek.fi/ek_suomeksi/tulevaisuusluotain/dokumentit/tietotori/matkaraportti_240604.pdf.
12. http://www.strategie.gouv.fr/rubrique.php3?id_rubrique=20.
13. http://www.plan.gouv.fr/; http://www.plan.gouv.fr/mission/historique.php; http://www.sjsu.edu/faculty/watkins/francereg.htm.
14. By then the Plan was called Centralized Commissariat au Plan.
15. Richardson, Jacques (2006).
16. http://www.datar.gouv.fr/. See Laboratory for Investigation in Prospective, Strategy and Organisation (LIPSOR) (www.cnam.fr/lipsor/eng/contents.php).
17. http://www.futuribles-revue.com/.
18. See for example: Z-punkt, "The Foresight Agency", (www.z-punkt.de); Institut fu¨ r Zukunftsstudien und Technologie-bewertung (Institute for Futures Studies and Technology Assessment, www.izt.de); Netzwerk Zukunft (www.netzwerk-zukunft.de); Zukunftsinstitut (www.zukunftsinstitut.de); Futur (www.futur.de), funded by the Federal Ministry of Education and Research; and Sekretariat fu¨ r Zukunftsforschung (SFZ, Secretariat for Futures Studies, www.sfz.de); 1. Agenda 2010 was presented by Gerhard Schroder, Chancellor of Germany, to the Bundestag on March 14, 2003; it is available in the form of a brochure (available at: www.bundesregierung.de/Anlage609273/The+brochure+.pdf).
19. Herault, Bruno (2006): Public forecasting and futures studies in Germany. *Foresight* 8(6) (2006), 71–77; Herault, Bruno (2006): Public futures studies: themes and variations. *Foresight* 8 (2) (2006) 57–69.
20. Ibid.

21. www.sachverstaendigenrat-wirtschaft.de; Council of the Five Wise Men (2002/2003), Twenty Proposals for Employment and Growth, Annual report 2002–2003, Chapter 1, Council of the Five Wise Men, Reutlingen.
22. Herault, Bruno (2006): Public forecasting and futures studies in Germany. *Foresight* 8(6) (2006), 71–77.
23. http://www.cpb.nl/eng/; Central Planning Bureau, Scanning the Future, A Long Term Scenario Study of the World Economy 1990–2015. Sdu Uitgeverij, The Hague, 1992.
24. Ibid.
25. Dijk, J.W.A van (1991): Foresight studies: A new approach in anticipatory policy making in the Netherlands. *Technological Forecasting and Social Change* 40 (1991). 223–234.
26. Meulen, Barend van der (1999): The impact of foresight on environmental science and technology policy in the Netherlands. *Futures* 31(1) (1999), 7–23.
27. Commission for Consultation of Sector Councils (2008): Horizon Scan Report 2007: Towards a Future Oriented Policy and Agenda. The Hague. http://www.horizonscan.nl/uploads/File/COS_binnenwerk%20engels_06 (1).pdf.
28. Habegger, Beat (2010, 55).
29. Botterhuis, Lineke; Duin, Patrick van der; Ruijter, Paul de & Wijck, Peter van (2010): Monitoring the future. Building an early warning system for the Dutch Ministry of Justice. *Futures* 42 (2010) 454–465.
30. Habegger, Beat (2010, 55).

PART III

# Interviews

*Foreknowledge enables wise general to achieve things beyond the reach of ordinary men.*

– Sun Tzu

*This part presents the views and suggestions of nine strategic foresight producers and users from countries around the world. These interviewees were asked how strategic foresight could facilitate national decision making better, and how our strategic foresight systems could be improved.*

*It was not always clear whether a person was a strategic foresight producer or user, as all the interviewed experts were doing both at some level in their work. The division obtained in this part is based on the administrative point of view. Public decision makers and high government officials who were well connected to the public decision making were considered here as primarily strategic foresight users, and the more hands-on strategic foresight practitioners were considered as primarily strategic foresight producers*

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# VIEWS OF POLICYMAKERS AND GOVERNMENT HIGH OFFICIALS

## HOW STRATEGIC FORESIGHT CAN FACILITATE NATIONAL DECISION-MAKING BETTER

*Dr. Jyrki Kasvi, Member of the Finnish Parliament and the Vice-Chair of the Parliament's Committee for the Future*

**Question** How can strategic foresight facilitate national decision-making better?

As a public policymaker, the only thing I really want from the Finnish universities and the other research and futurists communities to improve is that they start to practise the universities official third task which is participating and facilitating the societal discussion on issues which have great significance to the society. At the moment they are failing in that third task. And the reason for that is the fact that scholars are not rewarded for practising it. Not in official research points, in direct money compensations or any wage increase, or in any other way. Further, those who try to contribute the public discussion may be "punished" for doing that by questioning of their scholar ethic in some sense. What is to be done on that matter is to change the university sector's quite twisted rewarding principles which now favour only production of new graduates and publications on closed scientific forums. The new discoveries, breakthrough, and new science based initiatives made by the scholars should be simplified and popularised into understandable form, and those should be published broadly in main national medias. If scholars would start actively facilitating the societal discussion through media, all lack of problems that there is now in the Parliamentary work would be solved.

### *Mr. Patrick Nathan, Deputy Director of National Security Coordination Centre (NSCC) in Singapore's Prime Minister's Office*[1]

**Question** How can strategic foresight facilitate national decision-making better?

The best contribution that strategic foresight work under the government can do for national decision making is to produce accurate, on-time knowledge of top emerging issues in well selected packages. There should not be too many emerging issues with too broad descriptions handed to the decision makers, but a manageable amount of valid and well-argued issues that may require further actions.

### *Mr. Devadas Krishnadas, Deputy Director of Strategic Planning and Lead Foresight Strategist at Singapore's Ministry of Finance*

**Question** How can strategic foresight facilitate national decision-making better?

The objective of futures thinking within Singaporean government is not prediction, but to make sure that our decision makers have the following advantages. First, a robust diversity of opinions and thinking. Second, the provision of good anticipatory intelligence. Third, that we avoid group think. Diversity of opinions and thinking means also that we enhance coming to the same question from various perspectives — this is fairly recent understanding that we have. It means that you could have a fundamental national challenge, but you could have the answers coming to it from energy, social or security point of views. So it is more than having a difference of thinking within each of those "chunks" of thinking but having different "chunks" of thinking to begin with.

Group thinking is a dangerous quality to which all government and private organisations are vulnerable. This can result in strategic surprise. Strategic surprise is defined as an unforeseen situation that disrupts and dislocates one's decision-making paradigm. The way we try to avoid strategic surprises is to enhance anticipatory

intelligence, which means identifying and interpreting weak signals so that we can experiment with the potential differential parkways for the future before these parkways become more consolidated and concrete. This allows us to undertake policy innovation and experimentation and both of these allow us to be better prepared. Policy innovation is a more active form in which you innovate your policy according to what you anticipate could happen. Policy experimentation is a form where you think through what could be your responses without necessarily implementing them. This permits decision makers to be mentally better prepared. In an emerging crisis, this mental preparation means that we could rapidly scale up our ability to respond, because we have thought through some of the steps. This is important for preparing the government for the decision making in the context of the twenty-first century which has two determinative characteristics. One, it is increasingly uncertain, and two, it is highly complex. These two characteristics are now the two permanent dimensional parameters of the public policy.

**Question** How do you measure the success of strategic foresight?

Conventional success/failure measurements don't work with strategic foresight work because it is inherently long term which, doesn't pay out in short term. Second, foresight is meant to provide a policy intervention that changes the landscape of decision making. Therefore we have a "quantum mechanics problem" as the actors of the observation are changing the nature/field of observation. Therefore estimating whether we successfully have influenced the decision making landscape cannot be made in conventional success / failure scale. Rather we should estimate if the quality of decision-making work has benefited from foresight work. And this evaluation should be made both subjectively and objectively. Subjectively refers to the decision makers feeling of confidence — do they feel more confident in making decisions when they have foresight, and objectively refers to the retrospective study of the quality of decisions that had been made based on foresight .

***Dr. Osmo Kuusi, Senior Adviser, Committee for the Future of Finnish Parliament, Senior Researcher in Government Institute for Economic Research (VATT)***

**Question** How can strategic foresight facilitate national decision-making better?

First of all, the foresight practitioners should show the politicians how foresight actually can help them in decision making. Foresight experts should organise together with the Parliamentary Committees a really good seminar for Parliamentary members where they would demonstrate, why it is so important to understand the principles of science, to know the foresight methods, and what is a plausible scientific argument. Here should be thorough discussion of why a politician should be "more scientific in his arguments than the science itself" in order to be taken seriously, and not be considered as just an opinion factory. That way the trust and demand for foresight could be built.

In the case of Finnish Parliament's Committee for the Future, which directly facilitates parliamentary decision making, I would recommend that the whole fields of science and technology politics, including the preparation of the laws regarding these fields, should be put under its domain. For foresight, that would open the space of a real contribution to national decision-making.

***Ms. Riitta Kirjavainen, Counsellor, Finland's Prime Minister's Office, Deputy Head of the Policy-Analysis Unit***

**Question** How can strategic foresight facilitate national decision-making better?

First of all, there is no need for a large unified foresight unit in the government. By the turn of 1960s and 1970s, the Finnish government used to have a State Planning Office with various experts from different fields working together with state's long-range planning projects. That was the time when we still believed that the society could be planned. Nowadays, our model bases on flexibility and networking which allows us to establish and end projects and cross-ministerial

teams according the fast changing needs of the political decision making and according societal development. What is needed next, and what is already discussed in the government, is the development of state sector research centres. There the idea is that in the future, these research centres, which are directly or indirectly funded by the government's ministries, should work better together in producing knowledge according the fast changing needs of the political decision making. So far we have not reached that level yet, as paradoxically, the Finnish government is at the same time both very flexible, and very strictly sectored to silos. In the Prime Minister's Office we want to break that habit in order to facilitate national decision making better.

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# VIEWS OF OTHER STRATEGIC FORESIGHT EXPERTS

## HOW STRATEGIC FORESIGHT CAN FACILITATE NATIONAL DECISION-MAKING BETTER

*Mr. Ilan Mizrahi, Former Deputy Head of Mossad, and Former Head of Israel's National Security Council (NSC)*

**Question** How can strategic foresight facilitate national decision-making better?

In intelligence work we can foresee processes not events. Sometimes we may get such good and direct information that we can know of one event in advance, but we still would not know its implications. No one can know how masses will react or what are the motives of decision makers. And it is still an undecided issue that affects more things that happen: decision makers or masses of people?

The history of the world is full of examples of intelligence failures such as Pearl Harbour or Port Arthur. Despite the fact that we have always tried to improve all parts of intelligence work and make a theory of non-failing intelligence, new failures keep coming. Why? Because it is impossible to prevent failures in intelligence. It is still quite easy to work with natural disasters such as tsunamis or earthquakes, but when it comes to systems of people it is all different. If we do not get direct knowledge as we usually do not, we can only establish scenarios and give probabilities at best. This helps our decision makers to do pre-emptive strategies or alternative counter-strategies, which again can only mitigate the failures of intelligence.

### *Dr. Markku Wilenius, Ex-Senior Vice President of German International Allianz Corporation, Professor, Chief Strategic Officer (Insurance and Finance)*

**Question** How can strategic foresight facilitate national decision-making better?

Let's take an example. How could we have avoided the finance crisis in Finland? First of all, we should have had a system in which the Prime Minister's Office's Economic Council is heavily involved. They should have woken up to the crisis right after we got the first signs of it in the summer of 2008. And that was much before Lehman Brother exploded the bank. The system should also have contained expert nodes that would have analysed in real time the impacts and effects of such a crisis on the banks and the finance institutions' multilateral lending. There should have been several research institutes outside the government involved such as VATT, and Finland Futures Research Centre too.

What else should the system have contained? The Finnish Innovation Fund (SITRA) should have been heavily involved in the system, as it is the main engine and financier of the national innovation initiatives and policy. As soon as we would have got analysis results of the possible development of the financial crisis, that should have been brought to societal discussion, including participatory elements, and the result of that should have been brought to Parliamentary discussion. Then Finnish Parliament's Committee for the Future should have asked the Economic Council about its estimation of the evolving crisis. Could it have been possible to do in advance some descriptive scenarios for the finance crisis too? That is something we hardly had before the crisis. Only a few specific research institutes had done some types of assessment of the possible depth of the crisis before it broke out.

After we would have obtained a good mutual understanding of the nature of the crisis, both the government and the Parliament should have started discussions with the Federation of Finnish Financial Services (FK) and with the biggest banks and insurance institutes, in order to locate the space of potential actions, and each

viable actions' probable influences on lending, solvency and deposits in the markets. That way the result would have been much better that the result which we ended up with.

Therefore, the role of societal foresight is to arise potential problems in public discussion before they occur. Then, based on that, different stakeholder organisations' decision makers and their key experts should be able to make sense of their own role in the broad picture and change their actions accordingly.

**Question** How would you measure the success of strategic foresight?

First we need to select a list of Key Performance Indicators of the success. Then we need to study three levels of success: (i) How the strategic foresight process has affected the day-to-day practice of different stakeholders? (ii) Are the strategic foresight producers satisfied with the process and the results? (iii) How has the strategic foresight process affected the society in a long run? Have there been decisions related to the issues that have arisen in the foresight process, and have these decisions been implemented in practice. If strategic foresight has made impact to the practice, has that impact been mostly positive or negative based on the long-term results? The third assessment can only be done from historical perspective. All assessments should be made regularly.

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# STRATEGIC FORESIGHT KNOWLEDGE PRODUCERS

## HOW TO IMPROVE OUR STRATEGIC FORESIGHT SYSTEMS

*Mr. Patrick Nathan, Deputy Director of National Security Coordination Centre (NSCC) in Singapore's Prime Minister's Office, Colonel*

**Question** How can we improve our strategic foresight systems?

First of all we need to establish as many good quality futures units to all Singapore government's ministries as possible. At the moment there are 4–5 futures or environmental scanning units across Singapore government's 15 ministries. As ministries are divided into semi-autonomous statutory boards, there are in theory over 60 governmental units in total to which we could establish futures units that function as the best experts of that particular domain's futures issues and analysis methods. By achieving such a large number of futures units across the Singapore government's sectors and levels, we would enhance its overall futures studies capability significantly in the long run, because the very existence of the units would affect the work and thinking in other units that collaborate with them. Secondly, sharing between these expert units which would have developed new specific methods to be used in their field, we could end up with a large pool of good foresight.

Along with increasing the number of government's futures units, I would enhance the national strategic foresight capability by merging the three foresight functions that have always been very far from each other in all world governments. These are: (i) scenario/analysis work, (ii) emerging issues scanning/horizons scanning/early warning, and (iii) risks-evaluation work. The new system that merges these three foresight functions would start from detecting and evaluating risks. Then it would build alternative scenarios for the risks manifestations,

and finally it would carry out an emerging issues detection phase to locate the space of issues that indicate potential realisation of one of the scenarios.

### *Mr. Ilan Mizrahi, Former Deputy Head of Mossad, and Former Head of Israel's National Security Council (NSC)*

**Question** How can we improve our strategic foresight systems?

I will tell what my ideal strategic intelligence system would be like if I could design it from the beginning. At first, we should use as authentic observations and data as possible. Not estimations or interpretations. When a relevant piece of information is detected in intelligence, one analyst should be put to do a basic blueprint and analysis of it. Then this presentation should be discussed in specialist analyst Team A, which contains devil's advocates as well. Team A, gives several alternative explanations, views and scenarios of the detected information. Then all these alternative explanations and scenarios of Team A. are analysed and tested by analysts. If they are able to identify any piece of information that speaks against any of those that have been created, it becomes falsified according the Popperian falsification process. After this evaluation phase we may have 2–3 explanations or scenarios left, which will be processed into presentations by an analyst. Now the presentations of these remaining issues or theories are given to another team, B, which is gathered from non-specialists in the issue. Team B evaluates the importance of each of the given issues or theories, and creates their alternative explanations, views and scenarios of the issues. Next, Team A is challenged with the outcome of the Team B. Then, Team A, prepares the final 2–3 scenarios which are given to the decision makers. Decision makers need to decide what to do in each of the possible cases.

**Question** What are the requirements for the success of the system's methodology?

Firstly, this methodology works only if the head of the department is an open minded person, who listens to all views and respects also

opinions that are against his own, who is able to lead and make the discussive process function, who doesn't dictate the outcomes, who is able to select the best persons in the right places, knows the natural bias of all people and values, and who is able to adopt the methodology for different types of contexts.

Secondly, the specialists of the teams must be talented and real experts in their issues. They all should be aware of their own biases, that they interpret observation and issues always in a subjective way, and that they have unique personal history and scars that have formulated their values and world view. Hence, they should be humble with their estimation.

Thirdly, the information that is gathered must be first class — not interpretations of intentions, but direct reliable knowledge. Information sources should be versatile and it should cover as large an area around the issue as possible, leaving no gaps or shadows. If we have very good knowledge, we can know directly. If we end up having to need estimation, the data gathering part has failed.

**Question** Why would you establish two or three teams?

Firstly, you will never gather a really good team of analysts. There are always members in a team who are over self-confident, over conservative, more bias than the others, or not so good experts in the matter. Therefore, it is crucial to get the best possible heads in each department who make the teams to accomplish their objectives. One way to reduce the conservatism and bias in a team is to train the newcomers outside the unit so that they have fresh ideas. If the newcomers were trained inside the unit by having them sit next to senior workers, they would just learn the old ways of thinking, and that would increase conservatism in the group.

Secondly, experts are always prisoners of their own theories and expertise. *Reginald Victor Jones,* who headed scientific intelligence for the Air Staff during World War II and subsequently for the British Intelligence Service, once said that if you would go to your own organisation's technology unit with a new product, they would oppose it because they haven't come up with it. That is why you need to benchmark the product first with another team, and

then challenge the technology unit's team with the ideas, not the other way around.

Due to this human bias, it is not enough to know only the history of, for example, North Korea to know how it will act in a certain situation. You have to understand their leaders' personalities and profiles, their culture's characteristics, values and mindsets. You have to know what affected or scared their values and world views, and you need to understand how they evaluate you. And in estimating that, you are always biased and half blind.

In National Security Council (NSC), I used three teams to benchmark the ideas related to possible risks in order to reduce the bias. First there was my own 8–10 persons team. Then an intelligence team that was gathered from nominated experts in the issue, and thirdly there was a versatile group of persons who I esteemed for their wittiness and experience, but who were laypersons in the issue. That way we were able to reach better and more pure intelligence of the issues.

***Dr. Rauno Kuusisto, Professor, Head of Electronics and Information Technology Division, Finnish Defence Forces Technical Research Centre, Adjunct Professor (Network Enabled Defence), Finnish National Defence University, LTCOL (ret.)***

**Question** How can we improve our strategic foresight systems?

If I could establish a national foresight system all the way from the beginning, I would do it in the following way. First of all, I would not establish any new foresight units in the government. In the government there could be one new position for strategic foresight coordination however. That person would be responsible for gathering the best experts from each Ministries sectors to participate in the foresight system as informants. What we need is a system that produces high quality synthesising know-how and methodological capabilities. As the government's duty is to make strategic and operational decisions for the country, not to develop methodologies, we need to establish a public private partnership for the system. The system itself would have three levels: contents, process, and structure.

The first one—contents—is produced by the people who do

preparatory work in the organisation that is doing preparatory work for the public decision-making. Those people in ministries are the best possible subject experts in the matters of their domain. If that is not the case, then there would have been wrong recruitments in their history. The information preparatory board of foresight issues would be gathered from these persons. They would be the foresight process' informants who participate in workshops and surveys, and they would not participate in its method development work.

The second level, process, would be outsourced to an impartial private consultant that would be located outside the public preparatory work and the public decision making apparatus of the system. The content however would of course come from the public preparatory agents of the government as already explained.

As there are very many different traditions and communication cultures inside the government units, which means that the economists of Ministry of Treasury do not use the same concepts as the people who work with social and health issues somewhere else, the first objective of the process would be to commit these different government's preparatory units in the process. The fact that we have these different traditions and communication cultures is only a richness in our government culture because it guarantees that the steered change proceeds in all levels and embraces all value aspects.

The second objective of the process would be to systematically and impartially filter persons and their ambitions, and other invalid information away from the process, in order to produce pure real time knowledge into a form that the policy makers could utilise on daily basis. Regarding this second objective, it is crucial that the agent who steers the process is located outside the government, for if it was inside it, it would be located under just one ministry and it would get politicised in time, and it would not produce impartial knowledge anymore. It would stagnate and become a dinosaur with its own traditions and language, and soon there would be 12 such foresight units, as each ministry needs its own as a matter of course.

The third level, structure, includes all the actors and units of all of the levels the national foresight system like the facilitating private agent, the various public preparatory agents, and the decision makers.

**Question** How would the process function?

Nowadays the foresight production is fragmented and it is not synchronised. Hence, the national foresight does not have the process. The process is the key to good foresight. That is why the consulting agent, who steers the whole process, should follow the principles of the process strictly itself, and the principles of the process should be taught to the consultant agents' new recruits immediately.

Objective and fact based decision making and information interpreting is highly difficult, because all issues have many layers that make them complex, and all humans have different experiences and mindsets that determine their views of the issue. That is why I suggest that we establish a multidisciplinary senior synthesis experts pool for the system that would be able to synthesise these different views into versatile and multi-value clusters of views of the issues. In each workshop, the existence of sufficient versatile and multi-value views is facilitated by gathering experts from different fields. The senior synthesis experts do the synthesis of expressed views and argument in each workshop. These synthesised pure products are then delivered to the decision makers.

**Question** What is the role and organisation of the private facilitator in the system?

The consultant needs to be able to refine the influential information into any context of decision making. The consultant organises the workshops, does required preparation works, and synthesises them into useful form.

My ideal consulting company for this task would have three parts.

The first part is executive unit which coordinates the workshop sparring, gathering, analysis, management and information distribution, writes workshop reports, and does project management and the sales and account work.

The second part is the method development unit which constantly develops the foresight and analysis methods. This unit would contain both internationally experienced professor level foresight

or ICT experts, and young enthusiastic developers and researchers. This would be a combination of a university's research centre and an industrial development unit.

The third part would be the senior synthesis experts pool. The members of this pool would be at professor level, well over 60 years old, and they would have a really long experience of industry, business or administration. They would have versatile backgrounds, and they would have the ability to make fast syntheses of the results of horizons scanning processes and specialist workshops discussions. They would work in pairs in the workshops, and they would be the kind of persons who are able to rise in the end of the workshop and say that "this is what this means". They are the key persons who are able to detect the emerging issues to which the decision makers will have to react. That is the fundamental basis of all strategic foresight and decision making.

The division of labour in foresight workshops would end so that executive unit would select the experts and run the workshop, the method development unit would run background research and analysis that would facilitate the workshop, and the senior synthesis experts would participate only in the workshop part where they would put their sense-making ability and their instinct to use. Finally the executive unit would collect, visualise and write the product into a useful form which could be delivered to the decision-makers.

**Question** What kind of knowledge would the system try to reach?

The process would focus on detecting the new emerging issues, weak signals, changes in trends, and drivers that are hard to see. Scenarios are a good tool for environment change analysis as they help to identify potentially emerging issues to which the decision makers may have to react. A 20 year old or someone with little life experience cannot find any relevant weak signals. Only a senior expert is able to identify signals that have any significance for national decision making. They have long enough experiences from various contexts that it really takes to differentiate relevant from irrelevant and novel from existing.

***Dr. Markku Wilenius, Ex-Senior Vice President of German International Allianz Corporation, Professor, Chief Strategic Officer (Insurance and Finance)***

**Question** How can we improve our strategic foresight systems?

Creation of forums where contradictory information can be processed is the core of better strategic foresight. We need new sophisticated methods and constant risk mapping. When building such system, we should first assess risks according to their probability and their potential impacts. Then we should make a matrix where the risks are both timed, and arranged according to the first assessment. The idea would be to identify what risks seem to be most urgent in a certain time frame. In creating this matrix we should have an expert pool that would represent all interest groups. The matrix itself should contain seven circles, which are namely:

1. Economical indicators of macro economy.
2. Globalisation and trends that affect the societal stability and economical development, such as income and democracy issues.
3. Technological trends, how technological change brings new societal risks and how that change effects societies abilities to tackle risks.
4. Natural environmental problems, such as climate change, pollution, chemicalisation and so on.
5. Demographic factors, such as population size, location, immigration and ageing.
6. Health of the population, which is one of the issues which directly determines the societal development.
7. Societal mode or zeitgeist, which refers to society's shared values, feelings and views, which can be indexed by citizens' general societal confidence towards the future, and with different national happiness indexes

How could the national foresight and decision making system utilise the matrix? Let's say that we detect that the income differences start to increase between societal groups. After receiving that, we should identify the actors who are best able to follow each of the seven circles. Then we should name the actors that are responsible

for foresight gathering in each of the circles. That would be the foundation of the national foresight system. We should not build any new research units or systems. Instead, we should rely on existing systems and units and enhance the sharing and interaction among them. All the data gathering and analysis should be done impartially. However, as the decision making is always political, the produced foresight should be brought to political forum as soon as possible. To ensure this, the body that would coordinate this national foresight system should be located under the parliament. The role of the government in this system would be to nominate in its government programme[1] the research units that are responsible for the system's data gathering and analysis during its four year term. The government programme would also define the ways and methods that the environmental scanning is done, and how the results are interpreted and put into action during the particular government's term. Without this connection to the government programme, the system would not work.

To take an example, how could we tackle the downsides of the adult age diabetes? When the phenomenon is identified, I would put the resources for locating and gathering all the information that we already have on that issue. What kinds of living and eating habits people usually have etc. What kind of futures scenarios we could project from that? Then I would put the effort on expert evaluation a round which the societal implications of that are assessed from all societal angles such as medical, food science, economical, insurance point of views. The societal solution could be something like increasing the general awareness of need to change eating habits. Finally, the government programme should determine the ways that all the produced knowledge should be dealt in political decision making and how the decisions should be put into action.

### *Dr. Helene Lavoix, specialist in strategic foresight and warning (conventional and unconventional security issues) for state actors, France*

**Question** How could we improve our strategic foresight systems?

I will describe the type of system that I would like to create for national purposes. This description is based on my state actors con-

sulting and on my article in the European Commission's book *From Early Warning to Early Action*.[2]

In my national strategic foresight and warning (SF&W) system, notably for intelligence, I would establish two inter-related offices. The first would be a strategic foresight office and the second would be a warning office. In the foresight office I would rely on methods such as graphs and networks analysis—concept maps (e.g. Parmenides EIDOS, Singapore RAHS) and social network analysis (e.g. Gephi, UCInet), Bayesian networks—scenarios, morphological analysis.[3] The warning office would have all the classical functions of a warning office (from monitoring of issues to delivery of warnings). Two functions would be jointly assumed by the two offices, each bringing in their know-how: a unit for the detection of emerging issues, and one that would identify warning indicators (e.g. timeline indicators) for the issues and problems analysed by the foresight unit. Furthermore, the indications obtained by the warning office would be used to permanently update the existing foresight scenarios. Warning analysts should be involved furthermore in brainstorming and scenarios development exercises done by the foresight office.

In general, the methods used in foresight and warning can be placed along an axis ranging from the purely qualitative to the purely quantitative.

In terms of models and indicators for warning, the traditional qualitative approach, for its part, requires the use of many experts, which makes systematisation and comparison difficult, although they are vital for understanding issues. The quantitative approach is usually based on a statistical approach that seeks to correlate various variables and the result sought. While the quantitative approach permits the necessary comparison and systematisation, its main problem is an inability to highlight chains of causation and dynamics.

Both qualitative and quantitative approaches are subjective, as even in statistical methods you have to select the variables you use. However, keeping that in mind, I would rely more on qualitative methods in SF&W. It will furthermore be crucial to always keep in mind the importance of falsification.

**Question** What kind of information sources would you rely on?

It depends on the issue. Information may come from open or restricted access sources. It is not so much the availability of information as the selection of the relevant data in a huge and increasing load that poses a problem, i.e. the information overload problem. With regard to a state, in fact, a lot of data is available because of the existence of information services and networks of diplomatic bodies and other agencies covering the various political, military, economic and social milieux. Comprehensive access to the media and the use of external experts' networks is usually added to this arrangement.

The problem of selecting relevant information is directly related to the identification of the foresight question and to the design of the warning system and should therefore be resolved during the related steps. In particular, the model created must make it possible to combat involuntary biases (from cognitive biases to emotional, cultural, normative and organisational biases). It must also ensure that information from local or sub-national sources, depending on the circumstances, can be included. Whatever the SF&W system, the main concern when it is being used will be to assess the quality of the information, then to overcome at best any bias linked to the perceptions of the analyst.

With regard to the quality of information the double assessment system evaluating the source, on the one hand, and vectored information, on the other hand, has proved itself within the intelligence and should be widely adopted. It should, however, be noted that rumours, partially true news and narration may be useful, in that they reveal the beliefs and aims, concerns and anxieties of the actors under consideration.

In addition to minimising them through the use of a systematic model and other specifically designed methods such as Red Teaming or alternative hypothesis, the perceptual bias of the analyst will be easier to correct by comparing analyses over time and across space, as well as through a check on the internal consistency and logic of the argument set out.

**Question** What would you primarily try to focus on in your system?

You cannot select just one thing to focus on because the threats and dangers are numerous and tend to be versatile. You need to understand human intentions, issues, underlying processes and variables and to look at them historically to grasp dynamics.

The aim of a SF&W system is to obtain sufficient details on the world situation sufficiently early to enable the authority in place either to establish a policy or to take actions related to existing policies, whether this is in terms of total prevention or mitigation of potential adverse consequences or taking advantage of opportunities.

Depending on the objectives defined, a SF&W warning system will attempt to identify the main elements and dynamics leading to the risk or situation being prevented, or to the opportunity that could be seized. For example, the delivered warning itself may relate to instability in a country X or Y, if instability in foreign countries has been identified as a security issue—which is most of the time the case, with varying global to regional foci. It may also relate to conflicts, if identifying and preventing them makes it possible to achieve the objectives already defined.

**Question** What will your ideal team for strategic early warning system be like?

I would select intelligent people with at least a M.Sc. degree, who can think outside-of-the-box. My team would be multidisciplinary, multicultural and a mix of different characters and cognitive make-ups. Each individual would be focusing on his or her area and responsible for related set of issues, before all the work/issues are brought to a weekly team meeting where the knowledge is shared and brainstormed. One individual could be a member of several teams, clusters or units.

Regular outreach would be done, notably through intensive workshops with an array of diverse people from different walks of life, from scholars and specialists to gamers, chess players or writers.

**Question** How would your strategic foresight and warning system function and how would it be part of an overall risk management system?

My system would have five plus one stages: (i) foresight; (ii) warning and delivery of the warning; (iii) diagnosis and optionally evaluation of policy or response options; plus 1 – decision, which belongs to policymakers; (iv) planning of the response; and (v) response implementation.

The SF&W system covers steps 1 to 3, and then maybe involved or not in stage 4. Stage 5 will alter the world and thus feeds back in this way in the SF&W system.

The whole SF&W process would contain analysis of multiple issues and countries. In real life, for example, when it is about instability in countries, some systems revise their final product that produces a list of instable countries according to different timelines once or twice a year. We also find systems where all countries can be monitored on an ongoing basis.

As far as the warning function is concerned, we shall first identify the indicators that will be grounded in the model underlying our understanding of the issue. Actually, this model should already have been made explicit by during the strategic foresight analysis. During this phase a broad range of experts, scientists and other relevant actors may be involved. Notably for the foresight part, it would be useful to involve stakeholders to start working on their specific biases.

For each crucial variable that influences the dynamics of the system, corresponding indicators will be created. According to the resources available, the monitoring and surveillance of those indicators can be either done by one or many external centres or in-house by warning analysts or by both. Requirements for information, as demanded by each indicator, will then be sent to the relevant collectors. The system used traditionally by defence personnel is very efficient and should be used. The person in charge of a specific indicator will then be responsible for receiving the information and analysing it thus transforming it in indication. The various indications received will then be interpreted so as to make the judgement on the future for the issue at hand. Warnings

will be delivered—or not, accordingly—as a result of the process.

When monitoring indicators over time, if indications suddenly appear to be very different from those obtained previously, the analyst must verify with the collector, if possible the reasons for this change in order to reduce the likelihood of disparities that might come from bias in perception.

It is important to combine two ingredients: the use of human analysis and the most systematic, comparative, and objective methods that exist. The aim is to obtain correction or minimalisation of any bias linked to human perception or, in the case of meetings, to group dynamics but without destroying intuition, synthetic capacities, emotional elements and complexity of thought.

It should be noted here that it is necessary for the organisation to strive towards permanent update to include the results of new research as well as the result of self-assessment and lessons learned. Self-assessment allows learning from any errors that may be made. Each error detected must be the subject of a diagnosis to identify its origin and correct the system appropriately.

Finally, as a warning in itself may not be enough to attract the attention of policy-makers, they may also need to see the warnings accompanied by potential policy options and their assessment.

**Question** How would the system transmit its products to decision making?

There are various ways to deliver products, which cannot be described in details in such a short framework. The rule that needs to be followed is that the way to deliver the product should be adapted to the recipient of the product.

It is thus imperative first to map the clients or customers for the products, be it a foresight product or a delivered warning. The clients will depend upon the issue at hand, and the institutional framework of the country or organisation (its administrative tradition and culture, the structure and agency of its organisation, its history, the normative beliefs of the country, etc.). Once clients are identified, then it will be necessary to know the clients, their function and their institutional and professional surrounding (including in terms of individuals) as well as possible—feedbacks from them would be ideal. Considering this

understanding, second best channels of communication, if they do not yet exist, must be created and mutually endorsed.

Finally, best forms of communication for the delivery of the product must be found. Biases will be kept in mind for those three stages (mapping, channels of communication and forms of the product delivered). Any change to the client nexus, from the individual to the agency of the function to evolution of channels of communications will imply a need to reassess the delivery system and eventually to adapt it to the new conditions.

### *Notes*

1. The role of the government programme in the Finnish political system is defined in the Finnish case.
2. Interview answers are supplemented with citations from Lavoix's article: Developing an early warning system for crises. In David Sauveur (Ed.) From early warning to early action? European Commission, due to her recommendations. http://ec.europa.eu/external_relations/ifs/publications/articles/book2/book%20vol2_part4_chapter47_developing%20an%20early%20warning%20system%20for%20crises_helene%20lavoix%20and%20ifri.pdf.
3. Parmenides Eidos is a proprietary software, http://www.parmenides-foundation.org/application/parmenides-eidos/; RAHS has been developed by the government of the Republic of Singapore, Prime Minister's Office, National Security Coordination Centre, http://app.hsc.gov.sg/public/www/home.aspx; Gephi is an open source graph and visualisation software, http://gephi.org/; UCINET is a social network analysis software developed by Analystic Technologies http://www.analytictech.com/ucinet/.

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# STRATEGIC FORESIGHT KNOWLEDGE USERS

## HOW TO IMPROVE OUR STRATEGIC FORESIGHT SYSTEMS?

***Dr. Jyrki Kasvi, Member of the Parliament and the Vice-Chair of the Finnish Parliament Committee for the Future***

**Question** How can we improve our strategic foresight systems?

I would not create any monolithic foresight units in the Finnish government, because it would just focus on given themes and the possibility to produce or follow emerging "runners" would be neglected. In foresight, the "runners" and wandering are the most important thing. It is only good that foresight is being done in many different places from their own specific perspectives. What is needed is more networking, collaboration and transfer of knowledge between foresight experts. And how this could be done, as all sectors of the government are so apart and highly fenced both mentally and by juridical and budgetary points? I would create a matrix organisation for the strategic foresight of the government. This means that the foresight functions would still be distributed across the government, but each of them would be given a responsibility to report both vertically inside their own sector, and horizontally to the Prime Minister's Office, which should coordinate this matrix organisation. In order to establish this coordination body, I would move the State management unit from the Ministry of Finance to the Prime Minister's Office where it would be merged to this new strategic foresight matrix organisation coordination body. A new very high official's position should be established for directing this new coordination body, so that this head of State strategic foresight would have the power to order things to happen in ministries.

### *Dr. Osmo Kuusi, Senior Adviser, Committee for the Future of Finnish Parliament, Senior Researcher in Government Institute for Economic Research (VATT)*

**Question** How can we improve our strategic foresight systems?

It is crucial to strengthen the science in foresight. The good thing in Finnish public foresight is the fact that we really have put efforts in it. The risk there however is that, if the foresight would not reach its promises, then it could end up to be put aside. This is a real risk now, as Finland is in a crisis due to the fact that two of its foundations are cracking. Forest industry is on the way out of the country, and Nokia has not been as successful as it used to be, and it may leave the country as well, despite all the foresight that we have done. If after all, it would be discovered that the foresight has been sloppy somehow, that would jeopardise the whole idea of foresight. It is a good thing that this risk is acknowledged and there is know-how for it. We cannot ride with fuzzy images anymore. What we need now is establishing more strict science based rules to all foresight.

### *Mr. Devadas Krishnadas, Deputy Director of Strategic Planning and Lead Foresight Strategist at the Singapore Ministry of Finance*

**Question** How can we improve our strategic foresight systems?

I will start my answer from the background and evolution of the Singaporean foresight system. Singapore is a small and vulnerable country, which challenges the government to constantly analyse various risks. The evolution of foresight in government of Singapore began from risk detection and scenario planning in Ministry of Defence in 1991, but it was moved to the Public Service Division (PSD) in 1995, where it got a new name and objectives in 2003. Government of Singapore has always been willing to do experimentation on foresight work. One experimentation is Risk Assessment and Horizons Scanning Programme (RAHS), which was established in 2004. Overall, the evolution is going from one centralised foresight thinking to many distributed foresight thinking and units across the government of Singapore's ministries. The increased distribution

of foresight units across the government will mean that over time the policy analysis will more often come packaged together with the foresight types of thinking in order to give the decision makers the benefit of "out-of-the-box" thinking. This distribution is still an emerging process, but having come to this point of distribution in Singapore, we already recognise that we need to establish a network for coordination and collaboration in sharing between the foresight units. For this purpose we established the Strategic Futures Network (SFN) in 2010.

In the coming 4–5 years we will improve the Singaporean foresight system by stabilising these units and networks. It is also necessary to build institutional norms and principles of how we use and develop these new units with a larger pool of practitioners.

After 4–5 years we will probably see a stronger role for Centre for Strategic Futures (CSF) in building better networks between Strategic Futures units in ministries and the outside the government futures community, including selected corporate officers or academics who are key figures or experts in their domain.

### *Ms. Riitta Kirjavainen, Counsellor, Finland's Prime Minister's Office, Deputy Head of the Policy-analysis Unit*

**Question** How can we improve our strategic foresight systems?

There is much to do with the methods. Nowadays the methods and practices are too expert oriented. When there are just few people involved in foresight who share information just among themselves, the limits of effectiveness are narrow. According to the EU's definition for foresight,[1] it is a systematic, participatory, future intelligence gathering and medium- to long-term vision building process aimed at present-day decisions and mobilising joint actions. It has three dimensions in it: Structured anticipation research, Decision making and visioning, and Participation. The last one is the cutting edge, which should especially be present in order to be able to speak about good foresight. Hence, what we really need are tools for enhancing that dimension in foresight. We should not only add citizens' participation rounds to public foresight as a sugar coating, but get real

tools for participation and collaborative working between all key stakeholders, such as officials, politicians, researchers, and citizens. That is crucial as a big risk in Finland is consensus thinking. It helps decision making, but it can leave blind spots at very crucial points too. In closed circles the does not get renewed.

We need also new tools for the first dimension of foresight in order to detect weak signals, especially from so called the grey area (areas between administrative sectors). And what we really need to get under the Prime Minister's Office is to strengthen political analysis. Traditionally, Prime Minister's Office has been the office that delivers things from ministries to the national policy makers without deep analysis. We aim to carry out as relevant an analysis on horizontal issues for the policy makers as possible, but we need new tools too. We must be able to combine the history knowledge better to the foreknowledge regarding the issues that we are preparing. And finally, we need new tools for both fast reacting and creating futures visions. Otherwise we are lost in this complex world.

### *Note*

1. See the definition in "European Commission Research Directorate General (2001): A Practical Guide to Regional Foresight (FOREN)", http://foresight.jrc.ec.europa.eu/documents/eur20128en.pdf.

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# DISCUSSION

There are various types of foresight systems around the world. In some countries, like in Singapore, France and the Netherlands, the foresight capabilities are funded by the state and they are centrally coordinated and located under dedicated government units. In some other countries, like Finland and Germany, the foresight system is based more on informal public-private cooperation, where foresight capabilities are fragmented across various ministries, state research centres, universities, private businesses and other non-governmental organisations. Then there are countries that have strong representation of both features, such as the centrally steered approach and the public-private partnership approach, like the United Kingdom. Finally, there are several countries that seem to have almost no dedicated strategic foresight functions, neither within the government nor without, such as Latvia. Nevertheless, the purpose of strategic foresight in all countries is much the same, to enhance the decision makers' abilities to make better decisions. Some countries just have a more organised approach or a longer view to the future than the others.

The interviewees from Singapore emphasised the need to establish as many specialised foresight units in the government as possible, and to reorganise the existing national strategic foresight capabilities into a new type of efficient system that produces cumulative foresight and deeper understanding of emerging risks.

The interviewees from Finland saw the strategic foresight system development need in a much different way. They did not see any need to establish new or strongly centralised monolithic foresight units to the government because, according to interviewees, such units would just focus on given themes and the possibility to produce or follow emerg-

ing "runners" would be neglected and the unit would become a silo by itself. As one of the interviewees said, "In foresight, the 'runners' and wandering are the most important thing." However, one of the Finnish interviewees argued that there was actually a need for a coordinating body for the national foresight system because there was currently no process in foresight, but he emphasised that such a body should not be located within the government under any circumstances. Another interviewee emphasised the need to strengthen the scientific base of foresight in Finland in order to increase its credibility in the eyes of both decision makers and citizens.

To sum up, all the Finnish interviewees agreed that there were enough foresight producers in Finland but what was needed was a process or set of methods that would enhance the gathering, distributing, networking and genuine participation between all stakeholders and that would allow processing of contradictory information. Basically, the Finnish interviewees were hoping to see the creation of a new type of matrix organisation for the purposes of national foresight. That would mean more the flexible and efficient use of existing research capabilities, based on the decision makers' changing needs and an establishment of a new vacancy for foresight matrix coordination. It was greatly emphasised by the Finnish interviewees that the holder of such a vacancy should be in very high positions in administration. Otherwise, the matrix would not function well and its outcomes would not be transferred to the policymakers. What is interesting here is how the Finnish interviewees were basically calling for a power structure similar to what exists in Singapore at the moment, where Mr. Peter Ong is the head of all the government civil services and foresight functions at the same time, but they opposed the idea of having permanent foresight units with fixed duties under the government.

## Discussion Notes

1. Mr. Patrick Nathan was interviewed two times, on 27 August 2009 and 12 November 2010. Two persons, Jeanette Kwek, Senior Strategist, Strategic Policy Office, Public Service Division, Prime Minister's Office and Bernard Toh, Strategist, Stra-

tegic Policy Office, Public Service Division, Prime Minister's Office, participated in Nathan's interview in 27 August 2009. Jeremy Tan, Assistant Director, Horizon Scanning Centre, National Security Coordination Centre (NSCC) participated in Nathan's interview in 12 November 2010.

2. Interview answers are supplemented with citations from Lavoix's article, "Developing an early warning system for crises", in David Sauveur (Ed.), *From Early Warning to Early Action?* European Commission. http://ec.europa.eu/external_relations/ifs/publications/articles/book2/book%20vol2_part4_chapter47_developing%20an%20early%20warning%20system%20for%20crises_helene%20lavoix%20and%20ifri.pdf.

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The book discusses the principles of public strategic foresight, and defines the other interrelated concepts of foresight domain and strategic management. It compares the current practice of strategic foresight in Finland, Singapore and several selected European Union's countries' public decision making, and attempts to answer the questions, "What could be done to strengthen the linkage between foresight and decision making?" and "How could we develop our foresight systems to answer better the needs of public decision making?" The answers to these questions are gathered from interviews of nine international experts who represent different domains of strategic foresight.

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