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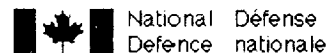
D STRAT HR RESEARCH NOTE RN 13/04

**STRATEGIC HUMAN RESOURCE PLANNING – THEORY &
METHODS: SCENARIO-BASED PLANNING APPROACHES**

**by
John J. Donohue, Ph.D.**

September 2004

OTTAWA, CANADA



OPERATIONAL RESEARCH DIVISION

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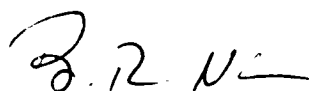
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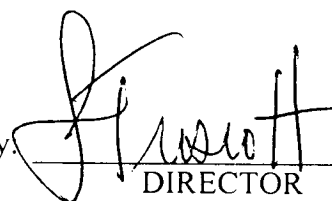
John J. Donohue, Ph.D.

Recommended by:



TEAM LEADER
D Strat HR 2

Approved by:



DIRECTOR
D Strat HR

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ABSTRACT

When selecting a strategic human resource planning approach, it would be useful to have means of determining the approach that best suits the situation. Donohue (2004) presents an assessment framework that may be useful for this purpose.

In the current paper, the range of activities that can be collectively labeled "scenario-based planning approaches" are reviewed in the context of the framework presented by Donohue (2004). First, in order to provide context to the reader, a brief review of the origins of scenario-based planning is presented. Next, the two dominant approaches to scenario-based planning (the Global Business Networks approach and the RAND approach) are presented. Similarities and differences between these approaches are highlighted. An example of the results of a scenario-based planning exercise are presented in brief, to provide readers with an idea of what the outcome can look like.

Finally, the assessment framework from Donohue (2004) is used to provide the reader with a broad understanding of the logistics involved in undertaking a scenario-based planning approach. Factors considered include: the planning situation wherein these approaches may be most beneficial; the types of outcomes that can be expected from these planning approaches; the amount of time required; and the resources required. Conclusions are presented that provide the reader with a sense of the utility of scenario-based planning approaches in strategic human resource planning situations.

RÉSUMÉ

Pour être en mesure de bien choisir une approche de la planification stratégique des ressources humaines, il serait utile de pouvoir choisir celle qui convient le mieux à la situation. Donohue (2004) présente un cadre d'évaluation qui s'acquitte justement de cette fonction.

Dans le présent document, un éventail d'activités pouvant être désignées « Approches de la planification stratégique axée sur les scénarios » sont examinées dans le contexte du cadre de Donohue (2004). D'abord et afin de mettre le lecteur en contexte, on présente une brève revue des origines de la planification axée sur les scénarios. On présente ensuite les deux approches dominantes dans la planification axée sur les scénarios (l'approche des Réseaux commerciaux mondiaux et l'approche de la société RAND). On souligne les ressemblances et les différences entre les deux approches. On résume également un exemple de résultats d'un exercice de planification axée sur les scénarios pour donner au lecteur un aperçu des résultats possibles.

Enfin, on utilise le cadre d'évaluation de Donohue (2004), pour permettre au lecteur d'avoir une bonne compréhension de la logistique sous-jacente à l'adoption d'une approche de planification axée sur les scénarios. Les facteurs considérés sont les suivants : la situation de planification pour laquelle ces approches peuvent être les plus profitables; le type de résultats attendus de ces approches de planification; le temps requis et les ressources nécessaires. Les conclusions présentées offrent au lecteur une idée de l'utilité des approches de planification axée sur les scénarios dans des situations de planification stratégique des ressources humaines.

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1. INTRODUCTION

"If you don't know what you are building, no tool will help."

– Nirenberg, 1997

1.1 Overview

1. In 1999, the Chief of the Defence Staff published Defence Strategy 2020 (DS2020; DND, 1999). "At its core, the strategy is to position the force structure of the CF to provide Canada with modern, task-tailored, and globally deployable combat-capable forces that can respond quickly to crises at home and abroad, in joint or combined operations. The force structure must be viable, achievable and affordable." (DND, 1999, p. 6). This document formed the basis for planning the way ahead for the Department of National Defence (DND) and the Canadian Forces (CF) into the new millennium. Indeed, in 2002, a follow-on document, Human Resources 2020 (HR 2020) was published, articulating the wide range of Human Resources (HR) strategies and objectives (DND, 2002).

2. Since the publication of HR 2020 (DND, 2002), which was predicated on a scenario-based planning approach, great interest has developed within both the Directorate of Strategic Human Resources (D Strat HR), and ADM (HR – Mil) as a whole, as to how strategic HR planning can best be conducted. Essentially, the question was posed, "Is our current strategic planning methodology the best tool for developing our long term strategic plans, or do better methodologies exist that we should be using?"

3. Other DND authors have addressed the issue of scenario-based (or alternate future) approaches to strategic planning. For example, Norton presents a coherent "model for effective strategic planning within organizations" (2002: i), as well as providing details of the HR 2020 development process. Verdon (2000) presents an integration piece on how strategic planning and decision-making are aligned. In a follow-up piece, Verdon (2003) explores how two different alternative futures methodologies can be used in an integrated fashion, in the context of accelerated change. Finally, Roi and Gladman (2004) explore the limitations of alternative futures methodologies. The focus of these fore-mentioned papers has been either on explaining

the use of specific approaches to scenario-based planning methodologies or on explaining how they have been used in strategy development processes.

4. Donohue (2004) provided a framework for assessing the utility of various forms of strategic human resource planning approaches. This framework provides a basis for comparison and selection of the appropriate approach for a given planning situation. In this paper, the range of activities that collectively fall under the umbrella of “scenario-based planning” approaches are reviewed in the context of the framework discussed in Donohue (2004).

2. A BRIEF HISTORY OF SCENARIO-BASED PLANNING APPROACHES

5. The generic term “scenario-based planning” refers to a broad range of planning methodologies that grew out of work at Royal Dutch Shell in the late 1960’s and early 1970’s. According to Schwartz (1991), the earliest recorded use of scenarios by planners was soon after World War II. Military planners, including Herman Kahn of the United States Air Force (USAF), developed scenarios of possible opposition actions and plausible responses. When Kahn left the Air Force in the early 1960s, he brought the concept of scenarios with him into the world of business planning.

6. In the early 1970s, Pierre Wack of Royal Dutch Shell raised the use of scenarios in business planning to new heights. Wack used scenario methods to explore the potential impact of increased oil prices on Shell. Originally, these scenarios painted vague pictures of possible futures, without detail as to what these future states might mean to the organization. The initial management response was that they were interested in the method, but no behavioral changes resulted from Wack’s scenario presentations.

7. Wack decided that in order to change the way management viewed reality he needed to change the fundamental nature of the scenarios. His revised scenarios described in great detail the implications to Shell of increases in world oil prices. These scenarios helped management envision the types of decisions that they would likely have to make, and the contexts within

which those decisions would likely have to be made. When the oil crisis hit in 1973, Shell was arguably better prepared than other oil companies.

8. This preparation eased the transformation process for Shell, helping catapult them from the 7th largest oil company in the world to the 2nd largest, in terms of size and profitability (Schwartz, 1991). Wack's ultimate goal was to use the scenarios to help Shell make better decisions about the future, not to develop better pictures of tomorrow. Despite the surface similarities, these are two very different objectives. Schwartz uses the term *reperceiving* to describe the desired result of this process; the objective is to enable management "to question their assumptions about the way the world works, so that they could see the world more clearly" (1991: 9). Verdon (2003) provides further detail on the historical development of scenario-based planning.

9. Two main approaches now dominate the scenario-based planning landscape: the Global Business Network (GBN) approach advocated by Schwartz (1991) and the RAND uncertainty-sensitive planning approach (Davis, 2003; Verdon, 2000). Each grew out of the foundational work outlined above. The main differences lie in the uses of the scenarios; GBN scenario processes are used less for prediction than to guide future decision-making, while the RAND approach is more prediction-focused in support of war-gaming exercises. These differences are explained in more detail in Section 4 of this paper: *General Methods of Scenario-based Planning*.

3. UTILITY OF SCENARIO-BASED PLANNING METHODS

10. The environment within which HR practitioners operate is becomingly increasingly complex. Societal expectations, government policy, and industry standards are constantly evolving. Concurrent advances in web-based information sharing and government and private sector policy have facilitated access to comparative information. It is incumbent upon HR practitioners within DND and the CF to stay abreast of these developments for a host of reasons, not the least of which is remaining an employer of choice for members of our target recruit cohort. Norton confirms this view: "The strategies organizations develop cannot be based simply on where they prefer to be in the future. How organizations get to where they hope to be will

partially, if not wholly, depend on external changes, including, but not limited to, social, technological, economic, environmental, and political changes, in the environments in which they operate” (2002: 6).

11. It should be noted that the forms of scenario-based planning addressed in this document differ markedly from the Force Planning Scenarios developed by the Directorate of Defence Analysis. The Force Planning Scenarios are tactically focused operational planning scenarios that might more aptly be titled ‘mission contexts’ to avoid confusion.

12. The increasing complexity of the environment requires the use of strategic planning methods that are capable of being responsive to these emerging needs, yet still rigorous to ensure the validity of the resultant strategy. The establishment of a scenario development process is “probably the most powerful tool for strategic preparedness in the complex, volatile ‘knowledge era’ environment” (Verdon, 2000: 3).

13. Contrary to popular belief, the “power of scenarios are [sic] not in their predictive accuracy, but in their ability to ask ‘What if’ in a detailed articulation and to force thinking to produce coping strategies. However, more important than coping strategies, a plausible set of scenarios opens and prepares mind sets for creative anticipation and reaction” (Verdon, 2000: 3). These comments speak to the intent of the scenario-building process: to change the way people think about the future, and to produce better decisions about the future. Norton concurs on both the nature of future change and the need for leaders to change the way they think: “The types of future changes that will occur, and their consequences are highly uncertain ... leaders must derive an understanding of impending changes, and alternative future possibilities. Based on this, they can develop strategies that are either capable of withstanding the broadest range of plausible changes, or to hold in reserve or deal specifically with the likelihood that certain changes will come about” (Norton, 2002: 7).

14. Johnston also praises the value of scenario-based planning methods. In terms of risk management, scenario-based planning methods “foster clearer understanding of current events by imagining their future outcomes” (2003: 3). This enhanced understanding facilitates the

identification of event predictors and facilitates the development of contingency plans. They also help broaden the thinking process by challenging the 'group-think' mentality and promoting broader appreciation of future possibilities than linear projection methods. Johnston (2003) also reports that scenario-based methods can be used in conjunction with other techniques (such as Strength, Weakness, Opportunity and Threat analysis) to improve decision-making.

15. The purpose of the scenario building process is not to develop word-pictures or mind-maps that accurately predict what the future will look like. This presumes that the future is essentially a linear extrapolation of the present, which is a naïve way of thinking. Verdon (2000) provides examples of different forms of change, from simple linear (incremental) change through non-linear change (exponential, phase transition) to chaotic forms of change (catastrophic, complexity theory). Any of these various forms of change, it can be argued, predict the future as well as linear change. Most projections have been developed from linear models for two main reasons: 1) the mathematical models supporting linear projection (i.e., the General Linear Model) have been well researched and widely used, and 2) the complexity of linear models is readily understandable by most people.

3.1 Strategic Thinking Capacity

16. Perhaps it is best to frame the development of scenario-based planning processes as a method of increasing strategic thinking capacity. The interface between the complex environmental issues and the need to build strategic planning capacity is summarized nicely by Verdon: "A capacity to develop and use scenarios is most useful when the external environment is complex and uncertain and the internal decisions involve major long term investment or have long term consequences. Scenarios are the means to an end, not an end in themselves" (2000: 4). This comment speaks to the issue of scenarios informing decision-making, not providing accurate predictions of future uncertainties.

17. The need for a shift towards more responsive planning methods becomes more evident on a daily basis. "We are moving from an understanding of the world as a complicated but stable 'clock-work like machine' with corresponding expectation of predictability and ultimately controllability, towards an understanding that the world is more like a complex integrated

ecology, with corresponding expectations of unpredictability and the need for agile adaptations. Not only is change accelerating, but there is also a growing integrated complexity among all dimensions of our existence, especially in those previously understood to be relatively independent” (Verdon, 2000: 8).

18. Other authors agree that the development of strategic thinking capacity is important. “An examination of different alternate future scenario planning methodologies is valuable for defence planners in that it will allow them to determine which methods best suit a given problem” (Johnston, 2003: 1). Norton concurs, stating, “the goal of scenario-building is to explore a broad range of potential changes ... whose outcomes cannot be predicted. Scenarios are what allow us to grasp the types of changes that can and might happen in order to challenge our implicit assumptions about the future” (Norton, 2002: 6).

19. Further, “learning to think strategically is a process of identifying the mental maps we all use to make sense of the world, and learning to change those maps to see the world and the future with new eyes. Developing and using scenarios are what promote new and different ways of thinking about the future” (Norton, 2002: 7). Here, Norton speaks to the process issues raised by Verdon (2000) and Donohue (2004), among others. Strategic planning is not something that can be done once a year and then put aside until next year. It needs to be an ongoing, continuously updated process that informs decision-making throughout the process. In Verdon’s words, “In the strategic planning system, there is no beginning and no end” (Norton, 2002: 10). Godet (2001) and Schwartz (1991) agree with this sentiment; Schwartz goes so far as to advocate the use of “strategic conversation” in order to make strategic thinking (and planning) a part of the daily routine.

20. In summary, it has been shown that there is great utility in developing a capacity for strategic thinking based on scenario-based planning approaches. This begs the question: “How does one go about doing scenario-based planning?” In the next section, a generic method of approaching scenario-based planning is explored in some detail, and reference will be made to other approaches where appropriate.

4. GENERAL METHODS OF SCENARIO-BASED PLANNING

21. Two main approaches to scenario-based planning have grown from the common roots outlined earlier. Schwartz (1991) presents a generic methodology for scenario-based planning that has been widely used by the Global Business Network (GBN) and its adherents. The second main approach is the uncertainty-sensitive approach developed by the RAND Corporation. Similarities and differences of the GBN and RAND approaches will be explicated after the presentation of the generic GBN model. While other methodologies do exist, the underlying philosophy is essentially the same as the GBN or RAND approaches. Where appropriate, reference will be made to alternate methodologies and information sources.

22. It should be noted that the purpose of providing these brief descriptions of the methodologies is to enlighten the reader as to what is involved in these two scenario-based planning processes to facilitate the selection of an appropriate strategic planning approach.

4.1 General Method of GBN Approach

23. There are eight steps to the generic GBN methodology outlined by Schwartz (1991). The steps are listed here; each step is addressed in detail in the following paragraphs:

- a. Identify Focal Issue or Decision;
- b. Identify Key Forces in the Local Environment;
- c. Identify Driving Forces;
- d. Rank by Importance and Uncertainty;
- e. Select Scenario Logics;
- f. Flesh Out the Scenarios;
- g. Determine Implications; and
- h. Select Indicators.

24. Step 1: Identify Focal Issue or Decision – This first step of the process is probably the most important in terms of ensuring that the resultant scenarios are well-suited to address the key issues. While this may seem to be belabouring an obvious point, it really cannot be emphasized enough, given the uncertainties associated with strategic planning. Unless the critical question or

issue is identified and defined as tightly as possible, the resultant scenario-building process may not be capable of providing useful guidance to decision makers.

25. While it is essential to clearly define the issue, it is also important to identify the environment within which the issue or decision will operate. Johnston (2003: 1) reinforces this point: "In the process of strategic planning one of the crucial early functions is the determination of the environment the strategy will likely operate in. Understanding the possible environments with which the strategy must cope will enable an appreciation of potential threats and opportunities."

26. Obviously, the nature of the key issue or decision will have great influence on the details of the remaining steps in the process. In order to maintain the generic focus of this discussion, no specific issue will be identified here. Rather, general guidelines as to avenues that may be profitably explored will be offered. These should be taken neither as recommended avenues nor exhaustive of the range of possibilities.

27. Step 2: Identify Key Forces in the Local Environment – In this stage of the process, the important factors (in the context of the issue or decision identified in Step 1) are enumerated. Decision makers will rely on detailed examination of these factors to inform the rest of the process. In addition, guidelines as to what factors are seen as positive and which are negative may be useful.

28. This type of information may include, but is by no means limited to, the outcome expectations of decision makers and stakeholders, differences in the viewpoints of decision makers and stakeholders, and competing processes or regulations that may impact on the outcomes of the process or the process itself. This type of information is essential to the scenario-building process.

29. The term stakeholder is used here in its most inclusive sense, to indicate all persons with an interest in the issue or decision identified. This may include those both directly and indirectly

affected by the decision, as well as those who may be only tangentially, but in their view significantly, impacted by the issue / decision or the planning process itself.

30. Step 3: Identify Driving Forces – This stage represents the most research-intensive part of the process. The purpose of this work is to determine the underlying factors that shape the forces identified in Step 2 of the process. These underlying forces, as their name suggests, may be neither readily apparent nor easily accessible. A good starting point is to examine the STEEP (society, technology, economics, environment and politics) factors as outlined below. It is also useful to have information as to what forces are pre-determined (e.g., demographics, statutes) and what ones are unpredictable (e.g., public opinion, political policy).

- a. Society – Schwartz (1991: 105) states “the continuing wave of population growth is perhaps the strongest driving force of our time.” It can be argued that this is still true today; although the specific aspects of demographics that are most important may have shifted, they continue to have great impact on strategic decision-making. Aspects of this variable that may be important include literacy, ethnic and cultural diversity, and increased life expectancy.
- b. Technology – Ongoing, continuous improvements in all forms of technology (including disruptive forms) may have important influences on the key forces identified in Step 2 of the process. For example, the advent of cheap, reliable and secure wireless technology has provided a wide range of possibilities for delivery of HR services to personnel who may not be co-located with the hardware normally required to deliver these services.
- c. Economics – Economic issues drive, both overtly and tacitly, almost all major decisions to some extent. While they may be difficult to trace, their importance cannot be overstated. Examples of economic issues include unemployment rates, taxation levels, and Gross Domestic Product.
- d. Environment – Although perhaps more tangentially related to HR issues than the other factors in this list, environmental impacts are highly politicized, and as such cannot be ignored in a rigorous process. Examples of environmental issues

include implications of oil reserve depletion, access to potable water, and environmental degradation.

- e. Politics – It is important to maintain up-to-date knowledge of relevant legal developments and extant legislation that may impact on the forces identified. Obviously, in Canada, both provincial and national levels of legislation must be monitored. There may also be international legislation that needs to be assessed for potential impacts on Canadian and provincial law. Given the status of DND and the CF as instruments of the federal government, the HR implications of federal policy and political are significant.

31. Step 4: Rank by Importance and Uncertainty – Schwartz (1991) advocates ranking both the key factors and driving forces on two criteria. The first criterion is the degree of importance of the factor or force with respect to the success of the focal issue or decision. The second criterion is the uncertainty associated with the factor; that is, the amount of confidence in the predictability of each factor or force. At this stage, the objective is to identify the two or three factors or forces that are the most important and yet least certain. These factors or forces will form the axes for the scenario-building framework.

32. Step 5: Select Scenario Logics – The scenarios are built on a framework consisting of the most important yet least certain factors or forces identified in Step 4. In Schwartz's words, "determining these axes is among the most important steps in the entire scenario-generating process" (1991: 243). They are the foundation for the learning tool that the scenarios represent. Necessarily, only very few factors or forces can be the building blocks for the scenarios, or the number of possible outcomes (scenarios) becomes large very quickly.¹

33. The scenario logic becomes the intersection of the framework axes. Assuming two forces or factors are selected, they can be presented as a matrix²; three factors or forces would be

¹ The number of scenarios increases as a geometric function of the number of forces or factors included at this stage. The number of scenarios is 2^n , where 'n' is the number of forces or factors.

² There is no requirement that the factors or forces be independent of one another. The matrix (or volume) merely provides a visual representation of interactions between the forces or factors to underpin the scenario development.

represented by a three-dimensional volume. The identified factors or forces form the basis for the scenarios; other important factors are still considered, but these forces or factors highlight the critical differences that must be addressed by the scenarios.

34. Step 6: Flesh Out the Scenarios – In this step, the impact of the various factors and forces identified in Steps 2 and 3 are examined. At this stage, each factor or force should be given due consideration, as their importance has been established. The point is to develop a story that makes sense from the variety of factors and forces identified. Logic must be used to determine where (and if) each component fits, and how the various combinations make sense together.

35. It is important to note here that the objective is not to develop clear predictions of what the future will look like; rather, the objective is to develop detailed pictures of possible futures to facilitate decision-making. This means that the scenarios must be *plausible*, not necessarily highly probable.

36. Schwartz (1991) provides some guidelines to aid in the creation of scenarios, gleaned from years of experience. First, try to avoid ending up with 3 scenarios, because this inevitably results in one scenario being labelled 'most likely', with the other two essentially discarded. At the same time, don't create too many scenarios; this will reduce the usefulness of the process as an aid to decision-making as the scenarios blend together indistinguishably. An unwritten rule of thumb is that the optimal number of scenarios is four. Second, do not assign probabilities to the scenarios. Doing so will reduce the seriousness with which the 'less likely' scenarios are treated. Third, carefully naming the scenarios will enhance the likelihood of their being remembered, and thus utilized. Finally, the scenario development team benefits from the involvement of three different groups of people: the decision-makers; people representing a broad range of functions within the organization; and highly creative people.

37. Step 7: Determine Implications – The penultimate step in the process is to revisit the initial issue or decision and examine how it looks in each of the plausible scenarios. Look for vulnerabilities that emerge. Decide whether the issue or decision seems robust across all of the scenarios, or whether certain plausible futures would cause major problems. Determine how

refining the decision or issue could improve it's performance in the face of any of the plausible scenarios.

38. Step 8: Select Indicators – The final step of the process is to determine what indicators provide information as to the direction events are taking; which components of which scenarios are most consistent with the course of developments. The truth is that the future will likely be a combination of the scenarios. The logic that framed the development of the scenarios will allow the indicators to be drawn logically from the resultant scenarios.

4.2 Summary of GBN Approach

39. These are the eight steps of the generic model of scenario-based planning outlined by Schwartz (1991). The same basic steps underpin most scenario-based approaches; the terminology may change and the emphasis may shift to different steps, but the philosophy remains consistent.

4.3 General Method of RAND Approach

40. The RAND approach to scenario-based planning is not dissimilar to the GBN approach; however, their focus has been on providing sophisticated war-gaming simulations for the United States military. There are 3 major steps to the RAND approach as outlined by Verdon (2003). The steps are listed here; each step is addressed in detail in the following paragraphs:

- a. Develop Core Scenario;
- b. Identify Branches and Shocks;
- c. Develop Strategies.

41. Step 1: Core Scenario – The first major difference from the GBN approach is the focus on developing a core scenario that represents the base case, or *no-surprises environment*. In this environment, parameters that will govern the future environment that are not under the control of the participants are explicated, setting the context for the simulation. In this way, the RAND scenarios are similar to the Force Planning Scenarios developed by Director of Defence Analysis, which represent mission contexts for planning purposes. The base case definition

represents a departure from the GBN approach, in that the future conditions are well-defined and represent predictions of what the future will be.

42. Step 2: Identify Branches and Shocks – In this step, the *branches* and *shocks* are assessed within the context of the base case. *Branches* are “uncertainties [that need] to be taken seriously, monitored and resolved once events solidify the evolving path” (Verdon, 2003: 6). These branches are events that are likely to occur, but their magnitude and direction are not necessarily predictable. These can be roughly equated with the driving forces and factors of the GBN method, but the comparison is not direct.

43. *Shocks* are “plausible events that are heavily discounted by best-estimate wisdom and given lip-service” (Verdon, 2003: 6). Shocks are possible (plausible) events that, if they do occur, may well be highly disruptive to the system. Although their likelihood of occurrence is low, their impact if they do occur is high. Again, shocks can be roughly compared to the driving forces and factors of the GBN method.

44. Step 3: Develop Strategies – In this step, the strategic planners develop strategies to address the core scenario developed in Step 1. Contingent sub-strategies are developed to address the branches identified in Step 2. Hedge strategies (capabilities) are developed to deal with the shocks. Finally, environment shaping strategies are developed, aimed at improving the odds of desirable future states occurring.

45. This proactive strategy development phase, where the environment-shaping strategies are developed, marks a pointed departure from the GBN process (Verdon, 2003). It moves the focus from a strictly predict-plan outlook to a proactive, future-shaping outlook.

46. Verdon (2003) also identifies a fundamental weakness of the RAND approach: the underlying assumption that all other factors will remain constant while the branches are examined in isolation. This assumption “strengthens two natural biases: for thinking in a linear manner about change; and for finding the right answer based on the best prediction” (Verdon,

2003: 7). This also represents a departure from the interdependent nature of the analysis of factors and driving forces under the GBN approach to scenario-based planning.

4.4 Summary of RAND Approach

47. These are the 3 steps of the RAND scenario-based planning approach outlined by Verdon (2003). The RAND approach is clearly tailored to serve the rigorous, prediction-oriented needs of war-gaming.

4.5 Summary of General Methods of Scenario-based Planning

48. In this section of the paper, the general methodologies of the two main scenario-based planning approaches have been explored. First, the Global Business Network approach was examined in some detail. Next, the RAND approach was examined, in sufficient detail to highlight the differences between the two approaches. Important similarities and differences between the two approaches were noted. It should be noted that the HR 2020 strategic planning at DND and the CF was done using a GBN-type scenario-based planning approach; other planners use the RAND approach. Perhaps, as Verdon (2003) suggests, a combination of the strengths of both would be best.

5. EXAMPLE OF SCENARIO BUILDING

49. An example of the use of scenario-based planning is the HR 2020 strategy document (DND, 2002). The HR 2020 working group used an adaptation of the GBN scenario-based planning approach to guide the development of the HR 2020 strategic objectives (see HR 2020, DND, 2002, for more details on this project and the process itself). These scenarios are presented as an example only. As with all rigorously prepared scenarios, these were prepared to address specific issues and questions, and thus are not appropriate for other applications.

50. The scenario framework developed for the HR 2020 project is presented in Figure 1. The key factors or forces identified as the most common, fundamental and least certain from among all others were 'globalization', 'technology', and 'liberalization'. A brief summary of the

meaning of these factors and the four scenarios developed from the framework are presented below.

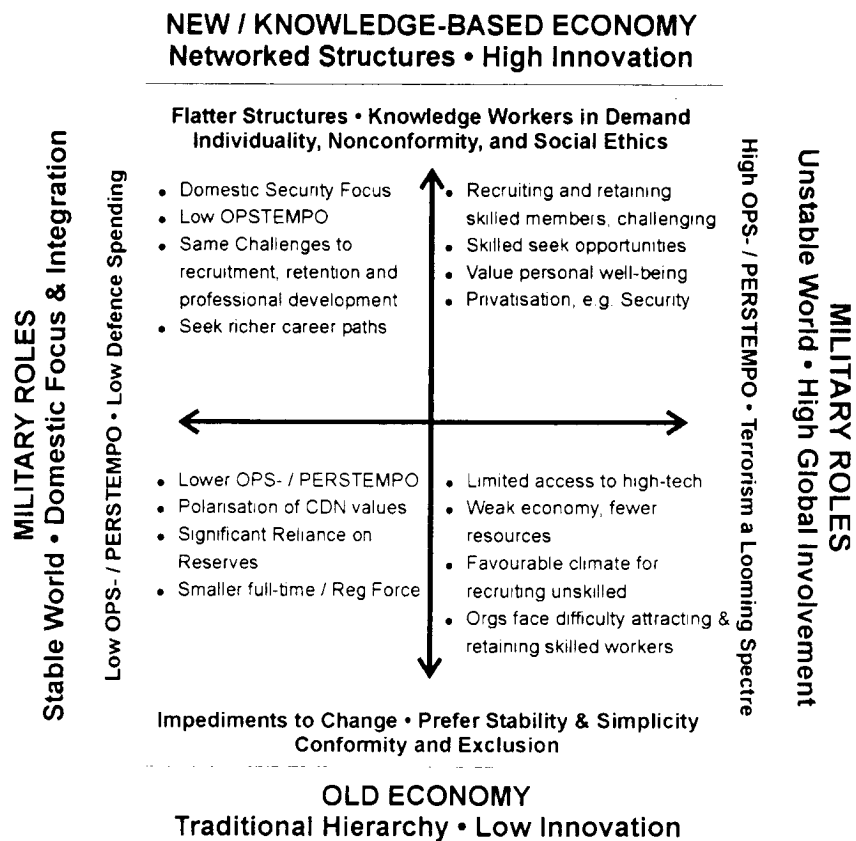


Figure 1. HR 2020 Scenario Matrix (adapted from Norton, 2002)

51. The 'globalization' factor was defined as: "Continued globalization pushing the boundaries of culture and family with pressure from exposure to new ideas, capabilities, products and services, the spread of liberal values and an increasing need for and development of institutions of global governance" (HR 2020, DND, 2002: 12). This also subsumes the 'liberalization' factor. The 'technology' factor was defined as: "Technology will drive social and radical organizational change, will push the bounds of what it means to be human, shape the new knowledge and networked economy by increasing reliance on the efficiencies and choice that a free market approach brings, with increasing emphasis on the valuation of intangibles and as a consequence increased market volatility and turbulence" (HR 2020, DND, 2002: 12).

52. These definitions provide an example of the level of analysis and detail that underpins the development of the scenario logic (Step 5 in Section 4.1 of this document). These two common factors that underpin the scenario framework presented in Figure 1 were the result of extensive consultation with decision makers, representatives and researchers from the entire military HR system within DND and the CF (for more information on the HR 2020 scenario development process, see Norton, 2002, and Davis, 2002).

53. As can be seen, the scenarios developed through the rigorous application of a scenario development process can be quite detailed. As in the case of the HR 2020 scenarios, they can be used to inform long-term strategic decision-making.

6. ANALYSIS OF SCENARIO-BASED PLANNING APPROACHES

54. An analysis tool that can help guide strategic planning practitioners in assessing whether a given strategic planning approach is feasible given the resources at hand is missing from the literature. Further, a framework that allows comparison of multiple tools on a variety of dimensions would also be useful, and is also missing from the literature.

55. In an attempt to rectify this situation, Donohue (2004) outlines four major components of strategic planning that can form a basis for the assessment of strategic planning approaches. These include the planning situation, desired outcome(s) of the process, the time available for the process (both calendar time and personnel time), and other resources (other than time) required for the planning process. Details of the components with respect to scenario-based planning methods are provided below.

56. In each of the next four sections, a synopsis of the four components outlined in Donohue (2004) is presented. After the synopsis of the framework component, an assessment of each of the scenario-based planning approaches outlined earlier is provided.

6.1 Planning Situation

57. The planning situation refers to the planning environment within which the strategic planning approach is most useful. As outlined in Donohue (2004), some strategic planning

processes are focused at Horizon 1 (H1 - present to 4 years into the future), some at Horizon 2 (H2 - approximately 5 to 15 years into the future), and some at Horizon 3 (H3 - approximately 10 to 30 years into the future). Other processes may span more than one horizon.

58. The Global Business Network (GBN) scenario-based planning approach *can* be used to address issues and decisions in and across all three planning horizons identified in Donohue (2004). Realistically, given the amount of time and effort required to prepare and deliver the various components of the scenario-building process, they are probably best suited for H2 and H3 types of strategic planning.

59. The RAND scenario-based planning approach, given its focus on prediction and specification of parameters, is probably best-suited to H1-based planning activities. With limitations, this may be extended to H2 planning.

6.2 Desired Outcomes

60. The desired outcome(s) of the strategic planning process refers to the end-products desired when the process is completed. GBN forms of scenario-based planning, in isolation, provide a reference frame against which the viability of a range of strategic decisions or issues can be assessed. They do not directly provide the decision or issue; rather, they provide a tool useful for informing decision-making.

61. RAND forms of scenario-based planning produce strategies for addressing the core scenario, contingencies for addressing branches, capabilities for addressing shocks, and even environment-shaping strategies for improving the odds of obtaining desirable future states.

62. Another outcome, for either form of scenario-based planning but probably more strongly associated with the GBN approach, and which may be intended or not, is the development of a capacity for strategic thinking. Participation in a scenario-development process will enhance understanding of strategic planning processes, the factors underlying the processes, and the inter-relationships between those factors. An enhanced capacity for strategic thinking, innovation and creativity may well facilitate the use of strategic planning and the use of strategic plans.

6.3 Time Available

63. The issue of time available is multi-faceted: “although time can be considered a resource like many others, given the current pace of change it seems to be more complex than other resources. The time available factor is two-pronged. First, there is the matter of *how much* time is available before the outcomes are required: i.e., project deadlines. The second factor is *how much* of *whose time* (as a resource, meaning actual person-hours of work) is required within the timeframe of the deadline, and *when* is it required” (Donohue, 2004: 24).

64. With respect to the first issue, the GBN form of scenario-based planning is not very timely. It takes a great deal of time to amass, analyze and synthesize the information required to develop the scenarios. Initial scenario development may take anywhere from several weeks to several months, or more, depending on the complexity of the decision or issues being addressed, the factors and forces driving those decisions and issues, and the research required to inform decision-makers. That being said, once the scenarios are developed, they can be updated on a regular basis and adapted for a variety of strategic planning situations, although care must be taken not to stretch the logic underpinning the original development process too far.

65. The RAND form of scenario-based planning, being much more prediction-focused than the GBN approach, may require less time to develop the scenarios than the GBN approach. This of course depends on the nature of the scenarios being developed, the availability of existing scenarios that have been developed for similar situations, and the number and nature of the branches and shocks identified.

66. Issues of *whose time* and *when* it is required are, again, dependent on the complexity both of the decisions and the issues involved. The initial development of the GBN form of scenarios may require many hours of work from all levels of personnel identified earlier in this document (Section 4.2). Refining existing scenarios is not nearly as time-consuming as developing new ones; again, granted that the background research (mainly environmental scanning) has been completed. Like all decision-making tools, the quality of a decision is dependent on the quality of the information that informs that decision. The RAND approach does not differ markedly from the GBN approach in this aspect.

67. Another factor to consider is the desired outcome. If the outcome is simply the scenarios to frame decision-making or to underpin war-gaming, the time requirement is shorter and the personnel involved can be limited to the HR research staff. On the other hand, if enhanced strategic thinking capacity for more than just the HR researchers is desired, then a concomitant investment in time resources is required, regardless of which scenario-building approach (GBN or RAND) is selected.

6.4 Resources Required

68. In the next sections, the resources required for scenario-based planning approaches will be examined under the categories of 'personnel', 'financial' and 'other'. The *personnel* category attempts to capture the need for various levels of both decision-makers and subject matter experts (SMEs). The *financial* category attempts to capture the capital expenditure requirements of the methodology: software, specialized equipment, etc. The *other* category attempts to capture information on other resources that may be required (Donohue, 2004).

69. Personnel – The personnel requirement of scenario-based planning will vary, depending on whether one is developing new scenarios or refining existing ones. Using the GBN approach, assuming that one is developing new scenarios, at the outset the time of senior decision-makers will only be required to provide the focal question or issue (Step 1) that will frame the research informing Steps 2 and 3 (identifying Forces and Factors) of the generic approach outlined earlier.

70. A great deal of background work from SMEs (meaning weeks to months) will be required to develop the internal and external contexts which inform the forces and factors (Steps 2 and 3 of the generic process outlined earlier in Section 4). This background work will also inform the ranking of the forces and factors (Step 4), the development of the scenarios' logics (Step 5), and the fleshing out of the scenarios (Step 6).

71. During these stages (2 – 6), the senior decision makers need to be heavily involved, if only to direct the researchers to ensure that the decision-makers have the information they need. The actual decision-making components of these steps in the process may not be time-

consuming, although the ranking of the importance of forces and factors can be difficult. A large proportion of the workload can be downloaded to the HR researchers during these steps, but the decision-makers still must control the direction of the development (Godet, 2001).

72. The final steps in the GBN scenario development process may not require the decision-makers involvement at all. The HR researchers and SMEs are probably best suited to identify the signposts and indicators that will allow successful monitoring of developments.

73. Using the RAND approach, senior decision-makers may be required to participate at all three stages of the process, at least to some extent. A great deal of the research work in support of the core scenario, the shocks and the branches can be done without their involvement, but the direction needs to be in place in order to verify the process.

74. If the process is being used to revise existing scenarios under the GBN approach, the time involvement of the SMEs and decision-makers will be reduced proportionally to the capacity for strategic thinking that has been developed within the organization. Specifically, if the analysis that informed the initial scenario development, and the monitoring of the signposts that resulted from the initial development, were sound, then the research component of the revision process should be greatly reduced. Again, the same holds true for the RAND approach.

75. Financial – The financial resources required of scenario-building approaches are again dependent on the strategic thinking capacity developed within the organization. As well, this section is aimed at identifying special expenses that may arise (i.e., contractors, consultants); normal costs of doing business (e.g., salaries for HR research personnel) are not considered here.

76. No special computer software or equipment is required to undertake a GBN scenario-based planning approach. Research capabilities are not beyond those found in most large HR departments. In some cases, some of the external force and factor information may be available publicly or for purchase from research organizations. It should be noted that care must be taken

not to compromise the integrity of the process for the sake of saving time or money with the purchase of inappropriately developed information.

77. The RAND approach differs here, in that it typically requires more technical support than the GBN approach. This is understandable, given the nature of the product of the process. This may require the employment of a consultant(s) to provide this support. The research requirements again will likely not unduly tax a well-equipped HR department.

78. Other – This category attempts to capture information on any resources that may be required, other than the personnel and financial. This may include special training needs, or contingency issues (e.g., timing of components). Specific requirements of methodologies that may necessitate or mitigate the use of other methodologies can also be included here.

79. In the case of the GBN form of scenario-based planning, training in facilitating the scenario-building process is strongly recommended. One cannot hope to develop useful scenarios without some form of facilitation training. This training is widely available.

80. No other specific special training or information is required. This assumes that the decision or issue (Step 1 of the process) is not of a nature so specialized that it necessitates the use of proprietary data-collection methods. It should be noted here that GBN scenario-based planning methods do not provide specific plans to follow; rather, they provide a reference frame against which the viability of a range of strategic decisions or issues can be assessed.

81. In the case of the RAND approach to scenario-based planning, again, no specific training is required that would not be found in a large HR department. Remember that this form of scenario-based planning was developed in support of war-gaming, and as such may require adaptation in non-military applications. For example, the way that the branches and shocks are analyzed for a war-gaming application may need to be modified for other uses, such as in strategic human resource planning.

6.5 Summary of Analysis

82. In this section, the Global Business Network (GBN) and RAND approaches to scenario-based strategic HR planning have been examined in the context of the framework developed by Donohue (2004). Specifically, the approaches were explored in terms of the four dimensions identified by Donohue (2004); namely, planning situation, desired outcome, time required, and resources required (personnel, financial, and other). The purpose of this comparison is to provide an assessment tool that can help strategic planners select the appropriate strategic planning approach for their application. The essential difference seems to be the planning situation where each is most appropriate. The GBN approach seems to be more appropriate for longer-term (H2 and H3) planning situations. The RAND approach, with its prediction-oriented focus, seems more suitable for shorter-term (H1) planning situations. This is not meant to say that either form of scenario-based planning is inappropriate in a given planning situation, just that one or the other seems more suited to the task.

7. CONCLUSIONS

83. The purpose of this paper was to provide a review of the range of activities that collectively fall under the umbrella of “scenario-based planning” approaches, in the context of the framework discussed in Donohue (2004). First, a brief review of the history of scenario-based planning from its inception within the USAF was presented. Next, the utility of scenario-based planning approaches was discussed, and a case was made for developing strategic thinking capacity throughout organizations.

84. Detailed explanations of the two main approaches to scenario-based planning, the Global Business Network approach and the RAND approach, were then presented. This provided an understanding of the essential components to scenario-based planning approaches, as well as offering limited detail as to how to proceed with either approach. Guidelines drawn from experience were also presented.

85. A brief example of the results of a recently-completed GBN form of scenario-based planning was then detailed. The purpose of presenting the results of the HR 2020 process was to provide an example of what scenarios may look like at the end of the process. Readers are

cautioned that these scenarios, like all others, were prepared for a specific purpose and may not form a basis for the development of other strategies. However, they have proven to be robust across the HR spectrum within DND and the CF.

86. Finally, an analysis based upon Donohue's (2004) framework for assessing strategic planning approaches was presented. The results of the analysis indicate that, whether the GBN or RAND approach to scenario-based planning is utilized, there is a requirement for large amounts of time and effort at the decision-making and support levels of the organization. The resource requirements are probably not beyond those of most large HR departments. There are no special requirements, although training in the process of scenario building is recommended, and not prohibitively expensive. The key difference between the two seems to be the planning situation that each supports; the GBN approach is well-suited to H2 and H3 types of planning, while the RAND approach is more suited to H1 planning activities.

87. The process of developing scenarios within a scenario-based planning approach provides a multitude of benefits for an organization, not the least of which is the development of strategic planning capacity throughout the organization, not just at the researcher level. Not only does it develop the organization's capacity for thinking strategically, it also enhances participants' understanding of strategic planning and scenario-based approaches to such planning.

88. In summary, the GBN form of scenario-based planning approaches provide a relatively low cost, albeit time-intensive, method of developing a reference frame against which the viability of a range of strategic decisions or issues can be assessed. The RAND form of scenario-based planning provides similar benefits, although it is predicated much more heavily on the predictability of the future, and as such is more suited to shorter-term planning than the GBN approach.

89. Finally, further research is needed in this area. This document contains an assessment of one form of strategic human resource planning: scenario-based planning approaches. The framework presented in Donohue (2004) seems to provide a useful tool for assessing the relative utility of strategic human resource planning approaches. To enhance the utility of the assessment

framework, and to better serve the strategic human resource planning community, the assessment needs to be applied to a broader range of strategic human resource planning approaches.

8. BIBLIOGRAPHY

- Davis, K. (2002). *Developing Human Resources 2020 Strategy of the Canadian Forces: Process Summary 2002*. Director of Strategic Human Resources Research Note 10/02. Ottawa: Department of National Defence.
- Davis, P.K. (2003). Chapter 5: Uncertainty Sensitive Planning. In Stuart Johnson, Libicki, M., & Treverton, G.F. (Eds.), *New Challenges: New Tools for Defense Decision-making*. Washington: RAND Corporation.
- Department of National Defence. (1999). *Shaping the Future of the Canadian Forces: A Strategy for 2020*. Ottawa: Department of National Defence.
- Department of National Defence. (2002). *Military HR Strategy 2020: Facing the People Challenges of the Future*. Ottawa: Department of National Defence.
- Donohue, J.J. (2004). *Strategic Planning – Theory & Methods: A Primer on Strategic Human Resource Planning in the CF*. Director of Strategic Human Resources Research Note RN 12/04. Ottawa: Department of National Defence.
- Godet, M. (2001). *Creating Futures: Scenario Planning as a Strategic Management Tool*. London: Economica.
- Johnston, P. (2003). *Alternate Futures Scenario Planning*. Director of Operational Research (Corporate) Research Note RN 2003/10. Ottawa: Department of National Defence.
- Nirenberg, J. (1997). *Power Tools*. Riverside, NJ: Simon & Schuster.
- Norton, S. (2002). *The Strategic Planning Process Using Scenarios: A Case Study of ADM(HR-Mil) in the Department of National Defence*. Director of Strategic Human Resources Research Note RN 06/02. Ottawa: Department of National Defence.
- Roi, M., & Gladman, B. (2004). *Look to the Future, Understand the Past: The Limitations of Alternative Futures Methodologies*. Unpublished ORD Research Note – presented at ORD Conference SEP 2004: Ottawa.
- Schwartz, P. (1991). *The Art of the Long View: Planning for the Future in an Uncertain World*. New York: Doubleday.
- Verdon, J. (2000). *Scenario-based Strategic Planning: Integrating Strategic Planning and Decision-Making*. Director of Strategic Human Resources Research Note RN 01/00. Ottawa: Department of National Defence.
- Verdon, J. (2003). *Strategic Planning Process – Uncertainty, Mitigation, Preparedness*. Director of Strategic Human Resources Research Note RN 09/03. Ottawa: Department of National Defence.

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When selecting a strategic human resource planning approach, it would be useful to have means of determining the approach that best suits the situation. Donohue (2004) presents an assessment framework that may be useful for this purpose.

In the current paper, the range of activities that can be collectively labeled "scenario-based planning approaches" are reviewed in the context of the framework presented by Donohue (2004). First, in order to provide context to the reader, a brief review of the origins of scenario-based planning is presented. Next, the two dominant approaches to scenario-based planning (the Global Business Networks approach and the RAND approach) are presented. Similarities and differences between these approaches are highlighted. An example of the results of a scenario-based planning exercise are presented in brief, to provide readers with an idea of what the outcome can look like.

Finally, the assessment framework from Donohue (2004) is used to provide the reader with a broad understanding of the logistics involved in undertaking a scenario-based planning approach. Factors considered include: the planning situation wherein these approaches may be most beneficial; the types of outcomes that can be expected from these planning approaches; the amount of time required; and the resources required. Conclusions are presented that provide the reader with a sense of the utility of scenario-based planning approaches in strategic human resource planning situations.

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