

SCIENCE & TECHNOLOGY FORESIGHT

US-Canada Environmental Scenarios

Foresight Strategy Network

A Succinct Explanation of Scenarios and Scenario Planning

“Scenario planning is a discipline for rediscovering the original entrepreneurial power of creative foresight in contexts of accelerated change, greater complexity, and genuine uncertainty.” Pierre Wack, Royal Dutch/Shell, 1984

Scenarios are tools for ordering one's perceptions about alternative future environments in which today's decisions might be played out. Unlike traditional forecasting or market research, scenarios present alternative images instead of extrapolating current trends from the present. Scenarios also embrace qualitative perspectives. Consequently, creating scenarios requires decision-makers to question their broadest assumptions about the way the world works so they can foresee decisions that might be otherwise missed or denied.

Strategic VISION prediction, is a concise definition and labeling of the established information. Scenario building is predicated on the assumption that if you speculate on a number of future outcomes, the real one will be one of them (Porter). Porter described a scenario as “not a forecast but one possible future structure”. It not only focuses on the outcome but equally on the forces that compel the outcome.

The College of Marin in California which teaches scenario planning (see web site at <http://www.marin.cc.ca.us/scenario/>) has a brief description of the approach which was used by the FSN:

"The process is highly interactive, intense, and imaginative. The initial phase usually involves rigorously challenging the mental maps that shape one's perceptions, and then searching for relevant information, often from unorthodox sources. We all see certain things, and have blinders on about others. Our perceptions are shaped by our past successes and failures, which may no longer be relevant. A good scenario planning project expands leaders' peripheral vision and forces them to challenge their own assumptions.

The next steps are more analytical: identifying the driving forces (social, economic, political, and technological) and the predetermined elements (i.e., what is inevitable about the future, like many demographic factors that are already in the pipeline). These factors are then prioritized according to importance and uncertainty. These exercises culminate in three or four carefully constructed scenarios. "

Scenarios then are:

- ❑ Descriptions of future environments,
- ❑ Project based on the past, the present, visible trends into the future,
- ❑ Take into account uncertainties and their impact,
- ❑ Build several consistent views of the future,
- ❑ Deal with qualitative (social values) aspects,
- ❑ Fact based, viable and relevant.

The benefits of the approach, are that it:

- ❑ Builds on team's different expertise,
- ❑ Identifies assumptions used,
- ❑ Considers multiple outcomes, future impacts,
- ❑ Has a broader outlook,
- ❑ Highlights uncertainties.

The process used to build scenarios can differ, but in our case:

- ❑ allowed systematic analysis and alternative interpretation of the present,
- ❑ allowed idea sharing and expectation discussions from different angles,
- ❑ stimulated thinking and learning and application of trends and variables,
- ❑ resulted in a range of possible outcomes, based on solid knowledge, arrived at through the use of imagination and never complete.

Context for the US-Canada Scenarios

In 2000, a group of Canadian policy and research planners was assembled to consider and construct a series of plausible scenarios on the future of bilateral relations as they might impact certain S&T dimensions- most notable environmental, energy and innovation prospects and to focus on those areas that could differentiate the attitudes and policies within the two countries.

Two critical axes were selected for building five distinct scenarios that seemed at the time rather provocative – perhaps less so now given the US second Bush administration while Canada has not shifted so dramatically into military-environmental isolationism to identify just one divergent factor

The Five Scenarios

Narratives linking the various characteristics for each of the five (5) scenarios were then developed to serve as a backdrop for the impact of the future on specific areas (such as the future scientific research priorities NRC). The synthesis is presented below as the final result of the three workshops.

In practice, scenarios resemble stories, written or spoken, built around carefully constructed plots with sound logical foundations. These ‘stories’ are prepared based on the known constraints, expected risks, viable alternatives identified. The participants usually identify more readily with being in the future. They can therefore test what the accepted strategy and policy is doing 10 years from hence, their strengths and weakness and their success in accomplishing or not the wanted result. This story format allows all the scenarios to be strengthened allowing for better strategies to be formulated for all eventual outcomes.

The use of animals or birds with certain characteristics to symbolize each of the scenarios is technique used often, and occasionally ingeniously, in scenario planning. The scenarios for the emerging South Africa (see the Mount Fleur interviews), for example, used the images of a "lame duck" or a "flight of flamingoes" to illustrate the scenario of a country headed for disaster or toward a hopeful future. In this exercise, the participants chose Canadian wildlife with perceived characteristics, such as determined and farsighted (woodpecker in a pine tree), or strong but limited by its environment (wolf on an ice floe)

or weak and a victim of its circumstance (beefalo in a theme park) or big and strong with no constraints (polar bear in a coca cola world) -or the timid beaver, circling in the middle of the pond, not daring to stay for long in any new scenario or world. More characteristics of these scenarios are given below.

Scenario #1

Pileated Woodpecker in a Pine Tree



High Intentionality, Low Constraints

The woodpecker, working efficiently high up in the pine tree, can see both opportunities and hazards from far away. In this scenario, the woodpeckers do their work at home but, face more opportunities than critical shortages or environmental crises, and through highly developed networks which link communities as well as their cousins in other countries, they stay abreast of changing times, technologies and the need for new policies - and take proactive steps to overcome obstacles before they threaten to dull progress.

Scenario #2

Wolf Pack on an Ice Floe

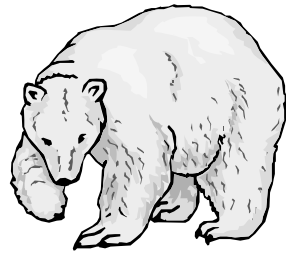


High Intentionality, High Constraints

The Wolf Pack on an Ice Floe envisages a tough, strong, proud and independent country that thinks that it can protect itself from and understands the serious dangers that lie ahead and enacts strong measures to counteract these threats, even when these involve tough domestic choices. The people in this country are well-connected both among themselves and with their leadership but not with the international community and, especially, not with the USA. As a result, the country loses out to global competition, not only economically in exports and through lost tax revenues and through e-commerce, but also through a flight of skilled professionals and knowledge workers to better opportunities abroad. Faced with limited economic resources they choose to make some choices that put the quality of life for the community ahead of global economic competitiveness. It turns out that the net effect of this brain drain and trade and financial flows is not entirely negative.

Scenario #3

Polar Bear in a Coca Cola World



Low Intentionality, Low Constraints

The Polar Bear scenario depicts a big, pompous, hedonistic animal living off its resources with no time for what is around or ahead of it, taking what is offered. The country recognizes the brute reality that it is not able to engage in long-term planning or national priority-setting and decides to eat, drink and be merry for a few happy decades. It is caught in the tidal wave of American commerce and lives or dies with it, not taking any precautions to avoid danger or any risks to take advantage of economic or technological opportunities, except where they translate into short term profit. It invests little in government or government policy capability- and, in return, gets little benefit from a public sector, depending almost entirely on the private sector for any change.

Scenario #4

Beefalo in a Theme Park



Low Intentionality, High Constraints

The Beefalo in a Theme Park scenario sees an endangered herd of individuals, wandering alone in the world with no sense of purpose and dominated by events from around and outside- economic, environmental and technological. Decisions are avoided whenever it is possible to do so, and are taken only in cases of absolute necessity and usually too late. Individuals are highly stressed through a lack of community (or government) concern and support and through the loss of personal identity and, as a result, loss of responsibility for individual action. As stresses accumulate faster than the community can deal with them, social and ethnic divisions deepen and fundamental cohesiveness is lost.

Scenario #5
Ad-hoc Beaver in Middle of Pond



Medium Intentionality, Medium Constraints

The Beaver depicts a country and a government that does not want to move very far away from the centre, does not want to make waves- at least not big ones. Never a risk taker, the beaver reacts to events, particularly major international ones- both political and technological, rather than taking or making initiatives of its own - except for small to medium scale ones which are trumpeted as more significant than they really are. Nevertheless, the "business" beaver through hard work - living up to it's motto "busy as a beaver" -manages to maintain its position in the world of beavers - economically, by becoming even more dependent on exports for trying to maintain the economy and the standard of living. The industrial beavers, driven by profits from sales abroad, take the lead on developing science and technology themselves rather than depending on basic science from public laboratories. Because policy is reactive, it tends to be conservative and not always as timely as called for. The graying "boomer" beavers find that they need to keep working to an older age than previously, in order to be able to maintain their life style which is neither rich nor poor.