Telfer Foresight Leadership Forum

Report

Workshops # 2 and 3

August 30 - 31, 2010

November 4 - 5, 2010

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Telfer Foresight Leadership Forum (TFLF) Program

Insights and Analysis Report for Workshop #2, August 30-31, 2010 and Workshop #3, November 4-5, 2010

Below is a final report which summarizes the main insight and analytical points, observations and comments from the TFLF workshops # 2 and 3 held on August 30-31, and November 4-5 2010 at the Telfer School of Management Centre for Executive Leadership (CEL).

Participants for the program included:

- Health Canada
- Agriculture and Agri-Food Canada
- Canadian Food Inspection Agency
- Policy Research Initiative
- Fisheries and Oceans Canada (Workshop # 3 only)

Introduction

The Telfer Team structured the two workshop sessions in sequence to enable Leaders to develop a focus on how to select analytic methods followed by an outline of key stimuli, examples and considerations for the derivation of foresight insights. As both sessions dealt with analytical elements, it was decided by the participants that the two session reports would be combined.

As well, it was decided it would be preferable to describe how one can approach the derivation of insights and then highlight differences in techniques between right and left brain analytical techniques, showing how retrospectively, the different departments managed their initial challenges in this regard.

In this regard, the two sessions were designed to produce the following broad benefits:

- An overview of a variety of key **foresight mindsets and related methods –** along with their strengths, weaknesses and experience sharing re tips for application and sharing of knowledge – and understanding of how **insights** can be developed from foresight.
- Commentary and observations from the Telfer team and guest lecturers regarding how international foresight players are addressing similar challenges.

Insights

What is Insight and How Does One Develop It

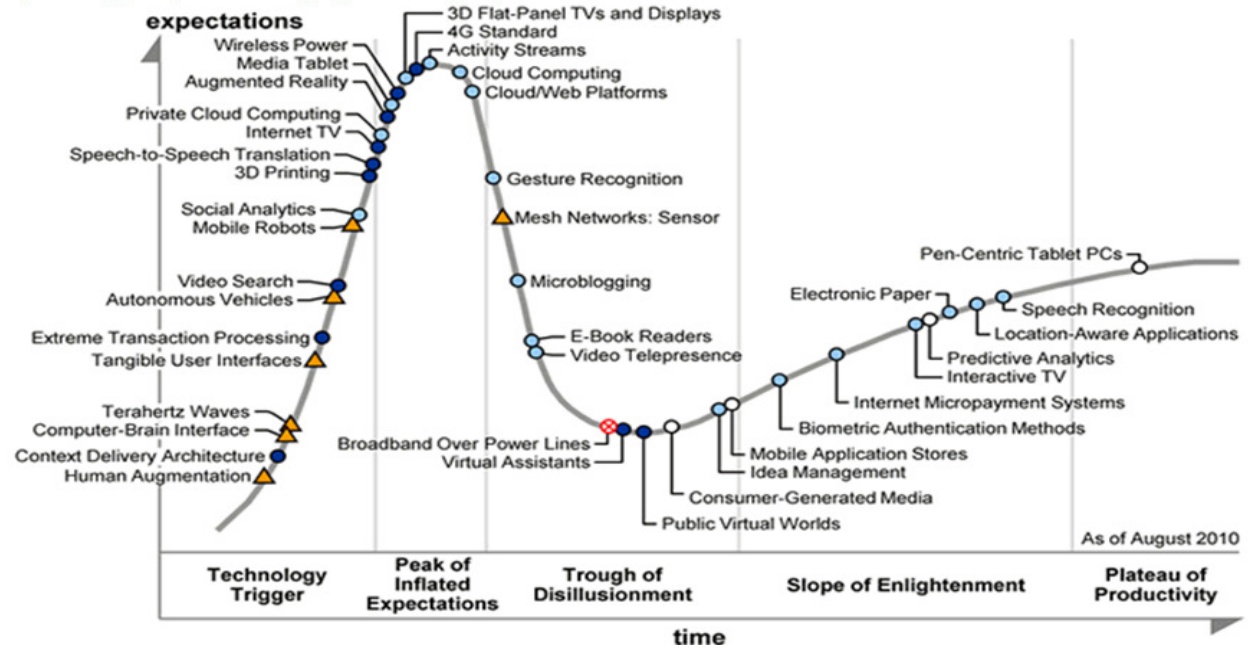
- A literature review reveals very few articles focused on ***insights*** – those few using the term use it in place of analysis.
- Competitive Intelligence has spent considerable time examining the concept of insights.

- Industry: many companies have instituted programs, staffed Insight units and nominated Insight VPs or teams – however the difference between Intelligence and insight remains unclear. Many assume that intelligence is information, and insight is analysis and implications.
- In the literature, most articles used the words analysis and insight interchangeably;
- Ben Gilad- differentiated insight from analysis as follows: insight is the ability to see things in ways others have not – e.g. author Dan Brown, in looking at the Da Vinci Last Supper painting, saw in it relationships that others had not which led him to author the Da Vinci Code.
- Another example of unique insight is British Airways on how they approached their new cabin design. They changed their frame of reference from air to water – for luxury spaces – and adopted yachts as insight sources of design innovations in small spaces.
- Insight can be created by using different frames of reference taken from other fields and defined as a creative process associated with right brain activity (analysis as left brain activity)
- **Telfer introduced a list of 10 definitions of Insight, derived from foresight practice and general experience with searching for new patterns and different interpretations**

1. Insight is a *form of perception* that is provided-defined and *extended* by collective shared experiences, so that it enables new ideas that can be applied to understanding of uncertainty;
2. Insight represents *an ability to project and extrapolate* today's observations into longer term patterns profiles, stories and vignettes that increase one's agility for the future;
3. Insight is a *new way of seeing a specific problem or opportunity* as it is framed or illuminated by new lenses, changing circumstances and new assumptions originating from a desire to learn from experience.
4. Insight represents a *capacity to learn from experience and alter* the actions and solutions-for strategic benefit of those involved.
5. Insight is *seeing the forest as a whole* when looking at groups of trees or *seeing a distinctive tree* when looking at a forest, and understanding why it is unique or distinctive – in other words changing the context.
6. Insight *involves understanding the greater significance* of seemingly discreet observations, and reformulating these by virtue of the linkages and implications amongst them - resulting in new knowledge.
7. Insight *is actionable intelligence and knowledge* derived from experience framed with other purposes in mind that emerges from seeing new ways of interpreting.
8. Insight is *analysis that focuses on implications and consequences* in new and innovative-contingent domains.
9. Insight comes from *an ability to transfer observations* and frame implications into other frames or domains of reference from the original to the unfamiliar.
10. Insight is perceiving that one's plane of view, lens for seeing or level or scope for analysis may be too granular or too amorphous for what can be learned or understood, and that a *different vantage point and perspective or lens can enable new perceptions* and understanding.

A final observation regarding insight and vantage point is that with rapidly evolving trends, drivers and prospective shocks, it is essential to be aware of the hype factor, here illustrated"

Figure 1 Hype Cycle for Emerging Technologies, 2010



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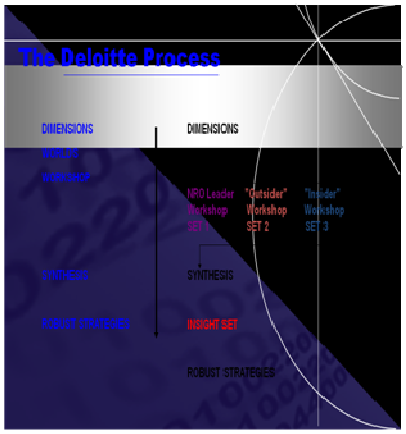
Proteus Example: Foresight + Insights

The USA –National Reconnaissance Office (a key element of the US Intelligence Community) launched a major project on how to prepare for 21st century intelligence challenges in 1999, and continued its work until 2005. In 2003 Mr. Smith was invited to join the Proteus Consortium as the first Canadian partner. Subsequently, the Proteus Canada Institute was created to support and develop the Protean Media contingent, dynamic futures methodology. The Insights are derived from a series of scenarios that represent situations which could create global disruptions – and their purpose was to alert US leaders to the kinds of changes the community might have to make or adapt to – and so far the first decade of the century has proven the Proteus approach to be remarkably prescient.



Protean Critical Thinking – New Tools for Foresight

- **Proteus is a set of foresight tools premised upon asymmetries** of action, intent and impacts, aimed at exploring unforeseen implications and consequences of actions undertaken under conditions of threat, surprise, disruption and disorder;

- **Proteus has codified the insights into forces, actions with consequences**. As institutions, authorities and empowered individuals seek to re-establish or create new equilibrium situations they effect Protean actions-reactions and power relations by selecting strategies based on Proteus insights – resulting in consequences and adaptive learning.

- **Proteus has developed a gaming platform to enable actors to learn about contingent actions.** ***Proteus Critical Thinking*** is a game of roles and strategies which has been designed to address complex multi-factional threat, opportunity and renewal situations.

The Proteus design was a partnership structure involving both NRO and external contractors such as DELOITTE who led this part of the project.

PROTEUS Insights For 2020- (disrupting Intelligence paradigms)

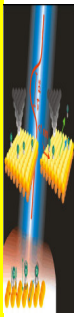
Starlight: ***"Foresight and Uncertainty Management"***
- Today's technologies and methods tend to focus strictly on events, which **have already occurred**

Sanctuary: ***"They Can Run and They Can Hide"***
- The ability to hide discrete events and broad trends despite ever-increasing globalization and worldwide connectivity

Sweat the Small Stuff: ***"Cyber Beings, Biotech, Nanotech"***
- The double-edged sword nature of cyber technology, biotechnology, and nanotechnology; **macro-effects will result**

Veracity: ***"The Challenge of Truth and Knowledge"***
- In a future of complex, interconnected global networks where the speed, pace, and rate of change challenges the importance of "truth" - **authenticity becomes elusive, sometimes irrelevant**

Power: ***"The Shadows In Plato's Cave"***
- If our focus is only on the instruments of power instead of the values from which they spring, **we risk strategic surprise**



PROTEUS Insights For 2020

Wealth: ***"Its Not Just Money";*** We need to understand the flows of non-traditional currencies (*e.g.,* knowledge, safety, health, genes, personal networks)

Herds: ***"People and Ideas on the Move"*** Nature of people and groups (their ideas, beliefs, loyalties, and affinities) is complex,dynamic-workforce implications

Parallel Universe: ***"From Networks to Cyber Life":*** Cyberspace becomes less a communications network and more a parallel universe coexisting and influencing every aspect of the physical world

Bedfellows: ***"The Significance of Teaming"*** The need for organizational agility – new partners, new customers, new relationships, and new appreciation for the speed, rate and pace of change

Threat: ***"The Obverse of Opportunity" :*** Our groups had a propensity to find – or even create – traditional threats. In doing this, they tended to either miss or misconstrue the non-traditional threats – and the corresponding opportunities – *in all of the venues.*

The Creative and Analytical

The Telfer Team opened up the formal part of day 2 with a continuation of the lecture from day 1 on how to develop insights. The lecture focused on left versus right brain techniques and foresight analytics using other lenses.

The following is a summary of the presentation:

INSIGHT: The Eureka Hunt; Why do good ideas come to us when they do? It's all about how your brain works: The left brain hemisphere is into details, it helps you focus on the trees. The right brain hemisphere is into subtle patterns, nuance and connections, it's less precise than the left hemisphere but far better connected across the brain as a whole, it helps you to see the forest.

There are two ways to solve a problem; *Analysis and Insight.* Analysis is a logical, thoughtful, step by step progression of activities and processes searching for an answer – it's a conscious brain activity largely supported by left brain functions. Insight is instantaneous; the answer arrives like a revelation – it's a subconscious brain activity largely supported by right brain functions.

The Insight Process: First the brain subconsciously enters a preparatory phase – it shuts down sensory stimuli and focuses the brain on the problem. Next the brain enters the search phase as it starts looking for answers in all the relevant places. Almost all the possibilities your brain comes up with are going to be wrong and the brain enters the impasse phase. Finally, with a spike of gamma rhythms the right brain recognizes a new pattern which enters the conscious brain and we enter the insight phase. It is possible to interfere with insight by making people explain their thought process while trying to solve a puzzle – this shifts brain focus to the left side and causes people to ignore the subtle associations coming from the right side.

So What is Insight: Insight is usually described as a change in perception. It consists of the realization of a new way to look at how things work (relationships, linkages, systems) that helps to define a new approach to a particular issue, problem or situation. This new paradigm arising from insight helps to identify new strategies and tactics and provide a way forward when other options have proved futile... and once insight is achieved it is often seen as obvious.

How Can Insight Help Foresight and Lead to Action? Foresight is inherently a process of analysis -- albeit in a hypothetical framework defined by a scenario.

- We define scenario characteristics and use these to provide a context and challenge function for understanding the impact and implications of these characteristics on our focus question or issue.
- We imagine the key factors that would have to be at play to successfully resolve our focus question or issue in the scenario (e.g. backcasting through inductive reasoning).
- We compare these to what currently exists and identify key factors we must maintain and critical gaps we must strive to fill for success in this scenario.
- Insight comes into play when we consider the results of several scenario analyses at the same time and begin to look for connections, similarities and common themes.
- Perceiving how scenarios that were initially designed to be different are potentially similar and identifying robust actions that make sense across a number of different scenarios is how we apply insight.
- These robust actions represent a suite of activities that could be confidently and proactively implemented in the short-term to improve the capability of existing systems and stakeholders to adapt to a range of possible future situations, notwithstanding that the future is uncertain.

Presentation by the Policy Research Initiative

- While all participants presented their foresight results and methods within workshops 2 and 3, for the purposes of this report which looks at analytical techniques and insights, only one presentation is examined in detail.

- The PRI Canada@150 project presents and example of outstanding analytical approaches and design that lends itself to insight development not just by PRI but by others who read the report. This will be explained in more detail in the following pages.

- PRI acknowledged some of the limitations inherent in their approach to the Foresight project, but that through various validation steps, the overall data can be relied upon.

- Telfer challenged participants to take the data results (given the large number of data points in the study) and use an insight approach - termed meta-analysis - and see how PRI's view of the future (Canada 150) can be used to validate the participant's departments foresight results.

- Further, they were asked to see if they could use PRI results in areas the participants departments had not examined to create new insights and relationships - in a sense enhancing their system maps with new independent and dependent variables;

- The PRI Canada@150 was described by PRI's presenter as an exercise in foresight literacy for senior decision makers, a chance to test social networking platforms, experiment with foresight methods, and of course, because of its focus on public service renewal, an important foresight project for the government.

- From a basic design perspective, the one year project was described in terms of 150 young public servants selected in a methodologically rigorous manner who were asked to think broadly about Canada and its future. They noted however that science and technology personnel (scientists and technology specialists) were under-represented in what was mainly a social and sector policy dominated exercise. This is called representative bias, and it could lead to incorrect interpretation of the data, however they invited external experts to supplement the knowledge.

- The project covered 13 provinces and territories and 40 departments and agencies; thus from a methods perspective, it had a strong representation of client departments and was geographically balanced. In addition to the 150 participants, the project used 20 enablers (coaches and helpers for the group); 14 ADM mentors for support; 9 key staff; 32 outside experts and 11 DM's on the steering committee.

- Three framing questions were used*: What key challenges will Canada face in 2017?; What are the options for dealing with these challenges?; and How must the public service adapt in order to meet these challenges?*

- PRI noted that, from a technology perspective rather than the usual email, wikis and web 2.0 were employed to encourage and enable collaboration on the project. As

well four conferences, various teleconferences and face to face meetings were held. Thus, the foresight project clearly used mixed methodologies.

- The project was divided into 4 steps:
  - Step 1**: Insights** were defined as relevant and intriguing observations, including weak signals. This one month phase was focused on identifying key trends, and insights –observations, writing them up and rating them. The output was amalgamated into 222 "insights ".
  - Step 2: **Change drivers**. This one month process took the insights and put them into the relevant scanning group (15) with each group identifying key drivers (three tiers). The idea was to get the group to triage the change drivers. From this 51+ drivers were identified.
  - Step 3: Create **influence diagrams.** This one month process which in a sense is a step towards analysis and insight, top tier drivers were written up with first, second and third order effects analyzed in the form of influence diagrams. The output was 40 change drivers with descriptions and influence diagrams. This allows for insights to be developed at each stage beyond the input definitions at each stage. It should be noted that the PRI presenter attempted to present each of these drivers but each resulted in lengthy and insightful discussion as participants were relating their experience, knowledge, and projects to the PRI results, thereby triggering new insights.
  - Step 4 Create **Scenarios**: This one day conference looked at the intersection of sets of 4 change drivers. An axial method was used to frame policy challenges, elaborate the scenarios and draw out policy options. The rich data arising from this step is being used by some departments to further develop their own scenarios.
- The results from this exercise were a series of policy challenge recommendations including human resource and structural requirements for Canada@150 Civil Service and an evolution of web 2.0 techniques for greater collaboration across departments and transparency of policy development process. These policy recommendations are now being looked at by the Clerk and DM committees and several of the recommendations appear to be receiving favourable review.
- There were additional benefits associated with the process:

  1. PRI noted that the impact of this process was significant in terms of the sponsoring DM's, ADM's and Departments' foresight literacy. The results exceeded these individuals initial expectations and many are now requesting foresight capacity be created for their Departments. Clearly one of the benefits of this project is promoting and advancing the use of foresight in the Federal Government.

  2. In addition, the use of the new technologies for collaboration such as the ***Clearspace*** web 2.0 collaborative platform, created enormous interest by participants and the bureaucracy.

Insight and Intelligence – Foresight for National Security: John Pyrik

Intelligence analysis is now being taught within the Federal government under the auspices of PCO. The Intelligence analyst program encompasses several courses designed to introduce participants to the rigours of proper intelligence analysis. John Pyrik, the Chief Instructor and program manager for the Intelligence Analyst Learning Program (IALP). This program currently has 7 courses designed to professionalize intelligence analysis. In looking at the analytical techniques presented in the IALP and those of Peter Bishop in Foresight and EFMN, it is clear that there is significant overlap between foresight and intelligence analytical approaches. The IALP guidelines for proper analysis could be used as guideline for those in the government conducting foresight programs. Eight best practices were identified by IALP:

1. Reflect on the problem, determining possible approaches.
2. Be resourceful and systematic when collecting information, documenting sources and noting caveats on usage.
3. Critically evaluate the quality of all information.
4. Develop multiple hypotheses / explanations.
5. Challenge assumptions, mindsets and biases.
6. Build collaborative networks.
7. Use structured analytic techniques.
8. Write clear, concise, well-documented, and client-focused reports

The IALP program focuses on 20 different analytical models and techniques that PCO felt were most appropriate for Federal needs.

Structured Analytic Techniques

Diagnostic	Challenge	Imaginative Thinking
Timelines	Devil's Advocacy	Decision Trees
Link Charts	Team A/B	Mind Mapping
SNA	Peer Review	Red Team
Evaluation of Information	High Impact Low Probability	Red Cell
Statistical Analysis	What if? Analysis	Alternative Futures
Assumptions Check		Structured Brainstorming
ACH		

Analytic Mindset and Methods

This section combines inputs to the Leaders Forum: examples and comments on Dr. Peter Bishop's presentation on November 4. 2010. It also contains some discussion highlights and additional materials from John Pyrik on how foresight is linked to intelligence through shared professional tools.

Dr. Bishop's presentation covered a wide array of observations and analytic methods.

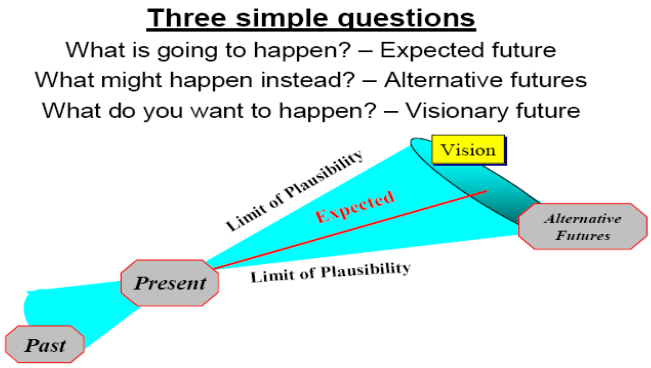
Key insights included:

1. Understanding context is essential before analytics can be applied: there really are contending futures:

- P**redictive Future;** e.g. First we must remember that we are all now learning about change but that we remain mired in a culture which emphasizes confidence of prediction and stability; Predictability, according to natural law, was one of the most powerful cornerstones of the scientific revolution --Newton, Leibniz, Enlightenment; It remains the **default assumption for** physical science, as well as for social science, and the professions; It is rooted in or based on the belief of **order**, causality, connectedness, and flow – where the future is regarded as a **river**, following one path and leading to a specific point;

- **Contingent Future**: where history is regarded as a **series of events and actions**, some with clear causal connections, but often as the result of surprising contingencies. In last century, the **contingencies and uncertainties** inherent even in natural phenomena have become even more apparent: e.g. – Stochastic processes – Galton;– Quantum mechanics -- Bohr, Heisenberg;– Biological evolution – Gould;– Chaos theory – Lorenz;– Complexity science -- von Neuman, Wolfram, Kauffman; The contingent future is based on the dominance of **chance and uncertainty** over determinism and predictability – so one can see the future as a **dice game;**

- **Chosen Future:** Primary responsibility for the future is on individuals—on their **intentions and actions**. E.g.**Religion** claims that we will be rewarded and punished according to our actions; the law also holds individuals responsible for their actions. Individuals in a **market** economy must provide for themselves and their families. When something goes well, we **hand out awards**; when something goes wrong, we look for **someone to blame**. This future is based on the dominance of **human agency and free will** over the forces of determinism and chance- it regards the future as a **blueprint.**



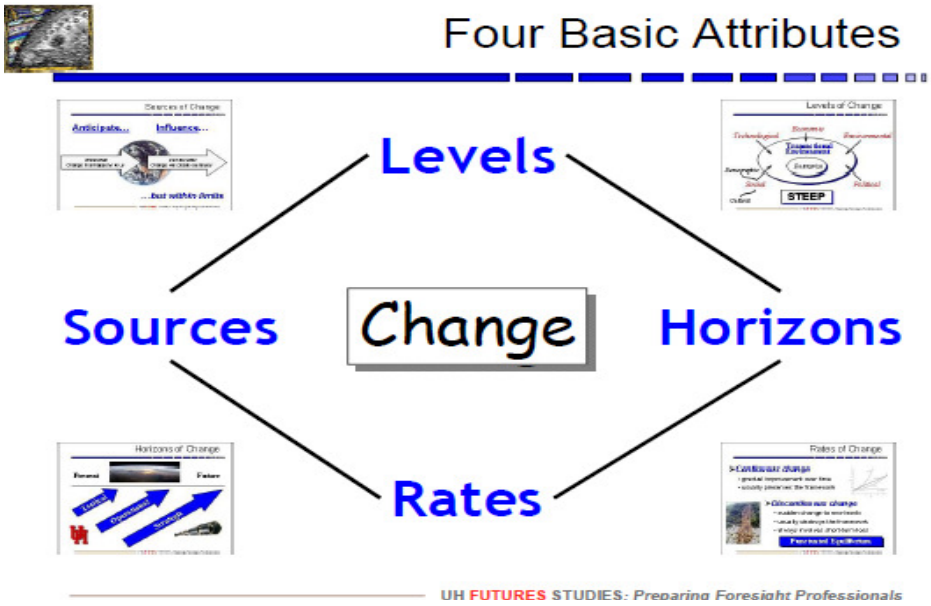
Strategic Foresight asks three basic questions:

2. Change itself is prone to different mental models or idiosyncratic interpretations.

- **Change dissected**; sources from inbound - happens to us – can anticipate it and prepare; or outbound – change we create – can influence and act on; level of change – transactional level (STEEP) where social includes demographic and cultural.

  (**NOTE**: despite lots of potential new health technology , we can still see the need for fundamental treatments ; so this may be an effective way to work on the wellness agenda – not more expensive- so less panic from lack of dollars – change evident; creative part of change)

- **Challenges**: successful people trust their mental models'; simple decisions are easier to explain; power of rationality is overrated; costs and benefits not occur for same people at same time; uncertainty sounds weak, unconvincing and submissive; making decisions based on certainties s easier to explain than making them on possibilities; forceful decisions get more recognition than flexible ones; assumptions are hidden; challenges are uncomfortable.



Change has many attributes and forms. We can for example distinguish between inbound change, where it happens to us and outbound change which is change we create ourselves. STEEP categories provide us with several levels or categories of change in the transactional environment.

Beyond this are the gradual improvements being introduced over long periods of time - which tend to preserve the framework context, and *discontinuities,* representing **sudden change to new levels –** that typically destroy or at least fundamentally alters the framework or context.

Dr. Bishop then returned again to the key factors affecting one's choices of assumptions, attitudes toward risk and perception of the main sources of uncertainty, and the three types of futures thinking:

- Expected futures – a baseline defined by trends, extrapolation and scientific thinking;
- Plausible futures – a set of alternatives usually imaginatively constructed with scenarios that contain discontinuities or surprises;
- Preferable or normative futures- clear choices characterized by empowered visions and desired plans.

Above all, the goal of foresight is to add flexibility and balance to complex systems, to help policy makers cope with massive uncertainty by enabling them to learn faster because in an era of rapid innovation it becomes the only sustainable advantage an organization can rely upon.

Summary of Insights Discussions

Insight begins where analysis ends. The development of insight must be built on a solid analytical foundation. If the underlying study is not methodologically sound, or causal relationships have not been developed, then it is difficult if not impossible to develop insights.

As foresight practices have developed, largely through the application of ever more diverse analytical techniques, new types of outputs are being generated. Concurrently, as the

turbulence and complexity of business and government has accelerated, stakeholders of foresight processes are asking that these outputs become more useful – i.e. to enable them to access timely and insightful information to make better decisions in matters of uncertainty.

While many stakeholders would like to have more predictive capacity, most now understand that the strength of foresight is its capacity for informing *contingent strategic positioning through the generation of multiple-plausible situations* and the formulation of robust ideas, actions and strategies that can help stakeholders avoid surprise and become more agile and prepared for change as it is manifested.

To do this a key element of a foresight process is what insights are gained through the exercise as well as through reflection on the learning and outputs after its completion.

Three approaches to creating insights were suggested:

- ***Creative Approach A***; taking other study results and looking at them through your own lens(day one focus);
- ***Analytical Approach A***: meta-analysis combining data; under this approach the results from different studies are combined and new analysis is done. Telfer is currently using software that allows users to blend results to identify new underlying relationships.
- ***Creative Approach B***; looking at results through other lenses. When it comes to examining findings and deriving insights and strategies from these, often a stimulus framework is useful. Such a framework relies on changing – reframing the finding by asking new questions from behind or through a new analytic lens.

Some typical lenses are:

- ***Macro Trends*** – since these should, in shaping the future have broad application or form background to all scenarios;
- ***Sectoral*** – usually represented by STEEP + or -, as in STEEPV or STIEG (Science, Technology, Innovation, Ecology. Governance) –or more specific to a traditional socio-economic sector as in ICT, Construction or Aerospace;
- ***Stakeholders –*** using major stakeholder groups to differentiate insights and strategies;
- ***Policy Themes*** – applying enduring thematic such as Canada-US relations, regional development, education and skills, national security etc.
- ***Foresight Applications***- domains and benefit areas where foresight has been particularly useful to government or business.