MetaSCAN 2011:

Exploring four global forces shaping our future

The world is changing …

Through foresight studies, plausible futures are explored to examine the relationships amongst issues and actors within the system. Foresight allows key assumptions to be tested and uncertainties revealed to identify opportunities and challenges so that effective coping strategies are developed.

… Canada needs to influence or adapt.

Successful foresight should challenge current assumptions and mental models, providing a space for reflection about the robustness of current policies and strategies.

Our purpose with this work is to stimulate discussion and help frame the questions we need to explore.

This MetaScan is a learning process designed to experiment with new ideas and techniques, and through collaboration and co-creation help build capacity to use foresight across government to strengthen the long-term policy process.

In the future, the experience gained through the MetaScan process could be applied by individual departments and agencies to inform their own forward policy agendas.

The pace of change is challenging our policy preparedness ...

Today   **2025**

Race begins to avert UN showdown over Palestinian Statehood
Globe and Mail – September 19, 2011

Bolivia and Colombia support "Arab Spring" in five African failed states
www.facebook.news.com – October 3, 2025

BRICS countries plot European bailout
The Globe and Mail – September 14, 2011

Turkey sets the pace for world economy
Twitter media feed (#economy) – February 2, 2025

Africa prospects lure investors, but is it ready?
Reuters – July 7, 2010

West Africa a dominant force in global commodities market
QQ Daily Digest – July 7, 2025

Sarkozy includes happiness and well-being in France's measure of economic progress
UK Daily Mail – September 15, 2009

China dominates well-being rankings
www.globeandmail.com – April 15, 2025

2012 set to be the year of 3D printing
Wall Street Journal – August 26, 2011

Canada leads provision of nano-particles for 3D printing
SMS – May 29, 2025

McAfee says it has uncovered biggest-ever series of cyber attacks
The Globe and Mail – August 3, 2011

Free-web is dead: Cyber "Big-5" shut last remaining independent global internet service
Audio-BLAST – September 16, 2025

... and Canada must look ahead to remain prosperous and secure.

Exploring plausible futures facilitates an understanding of potential issues and directions …

Environmental scanning identified numerous change drivers

The interaction among four of these drivers is explored in MetaScan 2011:
- Global economic and political influences are shifting
- Social media is playing an increasing role
- New determinants are impacting global competitiveness
- Well-being is redefining how progress is measured

The analysis is framed around these criteria:
- Plausible in a 10-15 year time frame
- Logically consistent scenarios
- Stretch and test current assumptions
- Strategic understanding of current systems

MetaScan 2011 used a rigorous foresight and scanning process:
- Assumption identification and testing
- Scanning and system mapping
- Development of change drivers
- Building of scenarios
- Analysis and production

The process depended on pulling ideas and expertise from people who collaborated throughout and contributed ideas:
- Almost 100 government scanners and policy advisors
- Academics and experts outside the government

MetaScan 2011 can be used to:
- Facilitate dialogue within departments and across government on shared assumptions and policy challenges
- Build more robust, forward-looking policy that takes advantage of opportunities and anticipates discontinuities

… to inform Canada's strategy in a more integrated global environment.

Global forces will play a larger role in shaping our future …

A multipolar world is emerging. Political and economic influence are shifting with the rise of new players and new agendas. Over the next decade important policy and investment decisions in Canada will be increasingly influenced by forces that are global in nature:

- **Shifting consensus**
- **Shifting prosperity**
- **New threats and shifting alliances**

Global Rebalancing

Economic models are under stress and a well-being framework is emerging. This movement is amplified by points of pressures such as:

- **Hypercompetition** – lower barriers to entry makes it difficult to sustain comparative advantage
- **Creating shared value**
- **Aging and population diversity**

Well-being

Social Media

Network-enabling technologies are redefining connectivity, collaboration and competitiveness in the digital age, changing the way we think and the way in which organizations work by enabling processes like:

- **Co-creation** – users are active in the design of the policy, product or service
- **Co-production** – process leverages users resources to create shared value
- **Co-consumption** – users jointly consume the product, reducing individual costs and adding value

Environment & Competitiveness

Canadian businesses, governments, and civil society are operating in a complex environment, characterized by rapid technological change, multi-faceted and fragmented regulations, standards and norms and growing pressures to adapt and remain competitive.

- **Changing determinants of competitiveness**
- **Rising innovation** – response to environmental concerns
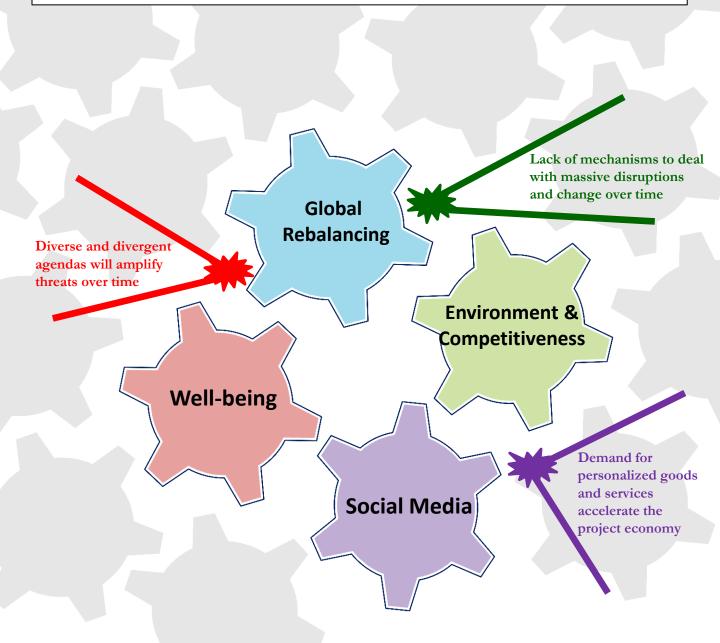- **Beyond compliance environment**

… and as systems interact with each other …

Challenges and opportunities: The pressures on the global system will force new ways of **thinking and working** as well as new ways of **producing and consuming**. The opportunity for Canada is to participate in the development of new **ways of governing** this complex system.

Global Rebalancing

Environment & Competitiveness

Well-being

Social Media

Lack of mechanisms to deal with massive disruptions and change over time

Diverse and divergent agendas will amplify threats over time

Demand for personalized goods and services accelerate the project economy

… they create unexpected problems and opportunities.

Scenarios explore the range of futures we may confront ...

The matrix below outlines the logic for each scenario. The scenarios can be used to identify new challenges or to test the robustness of current policies and strategies.

Scenario Logic	Muddling Through	Slow Decline	Gradual Progress	Transformation
Archetype	No major decline or improvement.	Things are slowly getting worse.	Things are slowly improving.	Crisis builds commitment for change.
Power Shift	Declining US and EU influence, while China and others grow.	Shifting coalitions; US, EU, China and others compete for influence.	US, EU, China and others cooperate to promote prosperity.	Recognition of shared values and mutual interests in addressing global issues.
Economy	West is fiscally constrained, but 'rise of the rest' slowly continues.	Recession. Growing debt with growth hubs in parts of Asia. Competing norms.	More complex value chains. Growing customization of products and services.	Food and water shortages. Shorter and more resilient value chains develop.
Governance	Patching-up old institutions, but social media is changing relationships and networks.	Mini-lateralism: coalitions of like-minded. Growth of gated on-line communities makes social consensus difficult.	Multi-lateralism is working and becoming networked.	Experimenting with co-creation and empowerment of self-organizing networks to produce global public goods.
Society	Expanding individualism. Demand for personalization.	Governments withdrawing from social safety net – collectives form to fill the void.	Growing demand for transparency and accountability.	Well-being framework is redefining progress and prosperity.

... and anticipate emerging challenges ...

… about how we think and work …

- **New ways of thinking and working:** The digital generation, social media and the next array of smart collaboration tools are among the more influential and pervasive change drivers of the next decade. They will change organizational processes, relationships and hierarchies. They will raise citizens' expectations for timely and customized services and engagement, especially among the digital generation.

Can the Government of Canada lower costs and improve service by co-producing public services and policy with citizens?

- **New ways of organizing**: Social media will amplify the influence of non-state actors, who are able to communicate, organize and mobilize people and resources efficiently. Speed and surprise will give social media users an advantage with both positive and negative outcomes for society.

Is Canada's public service ready for the acceleration of the process of engagement? What if we see this new capacity as an opportunity?

During its 65th session, the UN passed a resolution, inviting member states "to pursue the elaboration of additional measures that better capture the importance of the pursuit of happiness and well-being in development with a view to guiding their public policies…"
- July 13, 2011

- **New kinds of authority**: Business and non-state actors are shaping norms and standards for production and consumption through a growing number of instruments like 'triple bottom-line'. However, standards set by non-state actors could be sub-optimal and can create non-tariff barriers that undermine our ability to compete internationally.

What is the appropriate relationship between government and these co-creation processes?

- **New definition of progress**: There will be growing number of pressures and influential voices demanding more integrated policies to ensure long-term individual and societal well-being and global environmental sustainability. A number of countries are responding with new indicators, policies and programs. Civil society and communities are playing an active role in shaping this debate.

How can the Government of Canada leverage this shift to our comparative advantage?

Iceland is crowdsourcing its new constitution using public input via Twitter, Facebook and Flickr.

… how we produce and consume …

- **Evolving global value chains**: In the emerging "project economy" global value chains are being divided into smaller and smaller tasks. Co-production and co-consumption will likely accelerate and further expand job opportunities in the project economy across Canada as well as the world. But more jobs may be precarious with few benefits (e.g. pension/medical), while little, if any, security provided by the government (e.g. employment insurance). Social programs may need to be redesigned for both firms and individuals to share the risk of non-standard work as our prosperity may depend on more Canadians participating in the project economy.

  How should Canada's social policy framework adapt to the changing nature of jobs?

  Assessing competitiveness has generally focused on economic productivity. In 2011, the World Economic Forum announced its intention to begin developing and examining economic, social and environmental sustainability metrics and their impact on national competitiveness.

- **Emerging food and water shortages:** Climate change, access to land and natural resources, a growing middle class and an additional billion people on marginal land will likely create growing food and water shortages in several regions of the world over the next decade. Directly or indirectly, Canada could feel the effects of significant drought, food and water scarcity in the global system. Some countries may address these shocks through the protection of some agriculture and natural resources to build national resilience, more robust value-chains and facilitate the transition to sustainability.

  To what extent is Canada assessing dependencies and planning to maximize national and global resilience?

- **New pressures on globalization:** Trade liberalization and the demands for low priced goods in existing and emerging markets may be at odds with global sustainability and the desire to build national resilience. Growing pressure at the local and national level for flexible and integrated responses may result in strategies that could be considered protectionist.

  How does Canada position itself in the global effort to build resilience with the need to avoid protectionist measures?

  What is the country of origin in an interconnected world? The World Trade Organization has launched a "Made in World" initiative in recognition of the multi-country contributions to many products and services.

… and how we govern in a global system.

- **Shifting international consensus**: The BRICS and the "Next Eleven" will play a much more significant role in shaping global policy and they will bring new values, norms and priorities. Building consensus on issues will likely become more difficult. Canada's relative influence will shrink as the new players rise. A significant opportunity for Canada to build influence could be to use new collaboration processes to become an idea-generator and consensus-builder to help identify solutions that work for everyone.

  How can Canada leverage new collaboration processes to carve out a niche in this emerging world order?

  The US Army contracted a California firm to develop a hard-to-detect drone with a warhead that fits in a backpack.

- **Revitalizing key international institutions**: There is a need for brokerage institutions that reflect the real balance of power and facilitate problem solving when negotiations are stalemated (often over resources). Depending on the issue, problem solving could involve non-state actors who can mobilize needed human and financial resources at no cost to governments. Co-creation and co-production processes could dramatically change how we think about burden sharing and how we create and deliver global public goods.

  Could Canada experiment to help revitalize a key global institution and mobilize new and additional non-government resources?

- **Growing economic system vulnerability**: A new economic and financial system is emerging. In a period of economic uncertainty, growing influence of new players, rapid change, inadequate information and weak governance, many experts see this system as quite vulnerable.

  Could Canada help build global capacity to cope with complexity?

- **Security in a period of fiscal constraint:** Conflict will become more non-traditional (e.g. cyber-disruption, remote controlled drones) and the adversaries are increasingly likely to be disenfranchised civilians. The US will maintain military dominance but will be far more selective about where it engages. In this vacuum, rogue players aided by social media and disruptive strategies may grow. In a period of fiscal constraint, our allies and traditional alliances may be less willing to act.

  How resilient is Canada in the face of new disruptive threats?

  By 2020, five emerging economies will be among the top ten economies in the world. The rise in economic importance of these emerging countries will lead to a rise in their global political influence. China, for example, has since 2010 become the third largest shareholder in the World Bank.

Some of the potential changes are far more disruptive than others …

What if … ?

… the US significantly loses global influence?

This is not the end of the US but the pragmatic recognition that "the Rest" are growing and the economic centre of gravity is shifting to Asia. The US has large deficits, political polarization and faces a major re-thinking of many government policies and programs, especially its social welfare funding mechanisms. Canada is highly integrated with the US in economic and security terms. How will the world be different? What are the risks for Canada?

… immigrants don't come or don't stay?

Canada looks to immigration as the prime lever to address the effects of changing demographics and an increasing demand for a skilled workforce. In the era of super-mobility, global demand for highly qualified personnel and attractive emerging markets, Canada may lose its edge as a destination of choice for immigrants. How can we transform the challenges of population aging and skills shortages into an opportunity to optimize the participation of groups vulnerable to social and economic exclusion, including Aboriginal peoples, immigrants, seniors and youth?

… Canada's traditional natural resources are no longer competitive?

Canadians assume that our abundant supply of natural resources will ensure a prosperous future. China and others are buying land and investing in resource development in developing countries where costs and standards are lower than Canada, potentially undermining our advantage. Emerging global scarcity of water and arable land may lead to increased security pressures for Canada.

… the rate at which technologies displace human capacity increases exponentially?

Accelerated advancements in collaborative technologies, artificial intelligence and military robotics suggest technology will reshape our economic and social interactions. While new jobs will be created, one key consequence will be the net loss of traditional jobs. How will global job losses impact stability and value systems, such as wealth distribution?

… leading to discontinuities that could invalidate some of our fundamental policy assumptions.

How we react to these challenges will both be influenced by, and shape, our value system.

For each of these policy challenges and key uncertainties, the public service needs to think about how risks and responsibilities are shared.

Who is best placed to influence change?

- Global, national, regional, or local
  - What is the potential for multi-influential systems to facilitate subsidiarity?
- Individuals or collectives
  - What are individuals' expectation of government related to risks?

What balance of public policy will Canada and the public service need to be agile and resilient in this emerging world?

- Short-term or long-term
- System level or issue level
- Precautionary (ability to anticipate) or reactive (ability to adapt)
- Solutions optimized for delivery or creative experiments with permission to fail

As we move forward, it is important for decision-makers to weigh their level of engagement based on a common understanding of roles, responsibilities and opportunities in emerging and complex systems.

Do we have the right policy levers to anticipate, explore, experiment and adapt?

What is Foresight?

Scanning and foresight are tools to help us to think about the future.

- Scanning identifies changes in the domestic and international environments that could have significant implications for government policy and programs.
- Foresight processes explore how these changes may evolve and interact to create new policy challenges and opportunities.

The processes are not trying to predict the future, but to explore the range of plausible futures that may emerge and to help identify assumptions and strategies that are robust in preparing for an uncertain future.

But beyond and foremost, foresight is a natural human trait that allows us to consider a problem, explore options, weigh pros and cons and in doing so develop mental models of possible strategies and desired outcomes to help better plan for the future. With that perspective in mind, Horizons' foresight process assembles a range of visual tools which helps people surface their mental models and discuss them as a group. Engaging many perspectives ensures a more robust analysis which can then lead to better advice.

Foresight … A Path to Policy Preparedness

Foresight studies, when conducted by governments, allow policy makers to reflect on how the environment is changing and what additional information and planning may be required to ensure policy preparedness … Resilience.

Key Terms

Tools and Terms	Descriptions
Mental Models	Everyone builds mental models about the way the world works from the images, experience, knowledge and stories which we carry in our minds. We use these mental models to run 'movies' to explore alternatives and to help us make decisions. This capacity to visualize and run simulations is often an under-utilized resource. A variety of imaging exercises can help us tap into the power of this resource in a structured way.
Weak Signal	A sign that a significant change is starting or that it could be underway. Weak signals challenge our mental model. We have an 'ah ha' moment because it does not fit our understanding. Weak signals are found by reading, interviews and dialogue.
Insight	Builds our understanding of how an issue or system may evolve and what the consequences might be. Credible insights are the 'evidence' that help us reason about the future.
Trend	A continuous change that is evident from quantitative data. Trend data can help us understand the baseline or expected future.
Change Driver	Causes significant change in the system we are studying. Change drivers are often the focus of environmental scans and key elements in many foresight processes.
Influence Diagram	A visual tool for mapping plausible cause and effect chains into the future. It helps us explore, discuss and assess the possible future impacts of change drivers in an orderly way.
System Map	A visual tool that supports dialogue by identifying the critical elements in a system, allowing participants to develop an appreciation of how a system may behave or evolve under different assumptions.
Scenario	A story about the future. There are many types of scenarios and methods to develop scenarios. All of them explore multiple, plausible futures.
Policy Challenge	A challenge which current policies and institutions do not appear to be ready to address. One of the major products of our foresight work is to identify significant policy challenges that lie ahead. In identifying these challenges, opportunities often emerge.
Assumptions	One of the main products of foresight is to identify credible assumptions that are robust across a range of futures to help inform research, policy development and decision-making. We look at two kinds of assumptions. At the start of a project we try to identify the 'current assumptions' that are buried in current policy and dialogue. At the end of a project we test the current assumptions against the scenarios to identify 'credible assumptions' that appear to be robust across a range of futures.
Strategic Uncertainties	The questions that we want the foresight study to illuminate.

Our Process

ASSUMPTIONS
- Interviews and reading to frame and understand the problem
- Track core assumptions to test

SCANNING
- Identify insights / Weak signals that change is occurring
- Assess relevant trends
- Elaboration of commonly-held assumptions

SYSTEM MAPPING
- Identify key elements in the system
- Describe key relationships

CHANGE DRIVERS
- Describe change drivers shaping the system
- Influence maps of 2nd & 3rd order consequences
- Preliminary examination of the interaction of drivers

SCENARIOS
- Scenarios to explore range of futures
- Identify potential challenges and discontinuities
- Testing for robust assumptions and strategies

PRODUCTS
- Credible assumptions and key uncertainties
- Policy challenges
- Emerging issues
- Data needs