

A Critical Conversation™

Regulating for Innovation in an Age of Disruption

A Report on the Event Proceedings

Tuesday, April 16, 2018

**Conference Rooms, 2nd Floor Richcraft Hall, Carleton University, Ottawa,
Ontario**

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Executive Summary

The digital and data-driven economy opens up new opportunities for innovation, growth and jobs but also brings new competitive challenges for businesses and public policy challenges for governments. Governments are focusing their effort on adopting new digital technologies and capabilities aligned with business ambition, strategy, and market potential, as well as on preparing for continuous disruptive economic and social challenges. To accommodate this period of rapid change, governments and regulators must respond with agility to meet policy objectives.

The RGI hosted the *Critical Conversation on Regulating for Innovation in an Age of Disruption*, to provide an overview of the current and future state of the relationship between regulation and innovation.

Drafted by Jonathan Butler and Ian Currie (Innovation, Science & Economic Development Canada) the discussion paper provided background on the issues at hand:

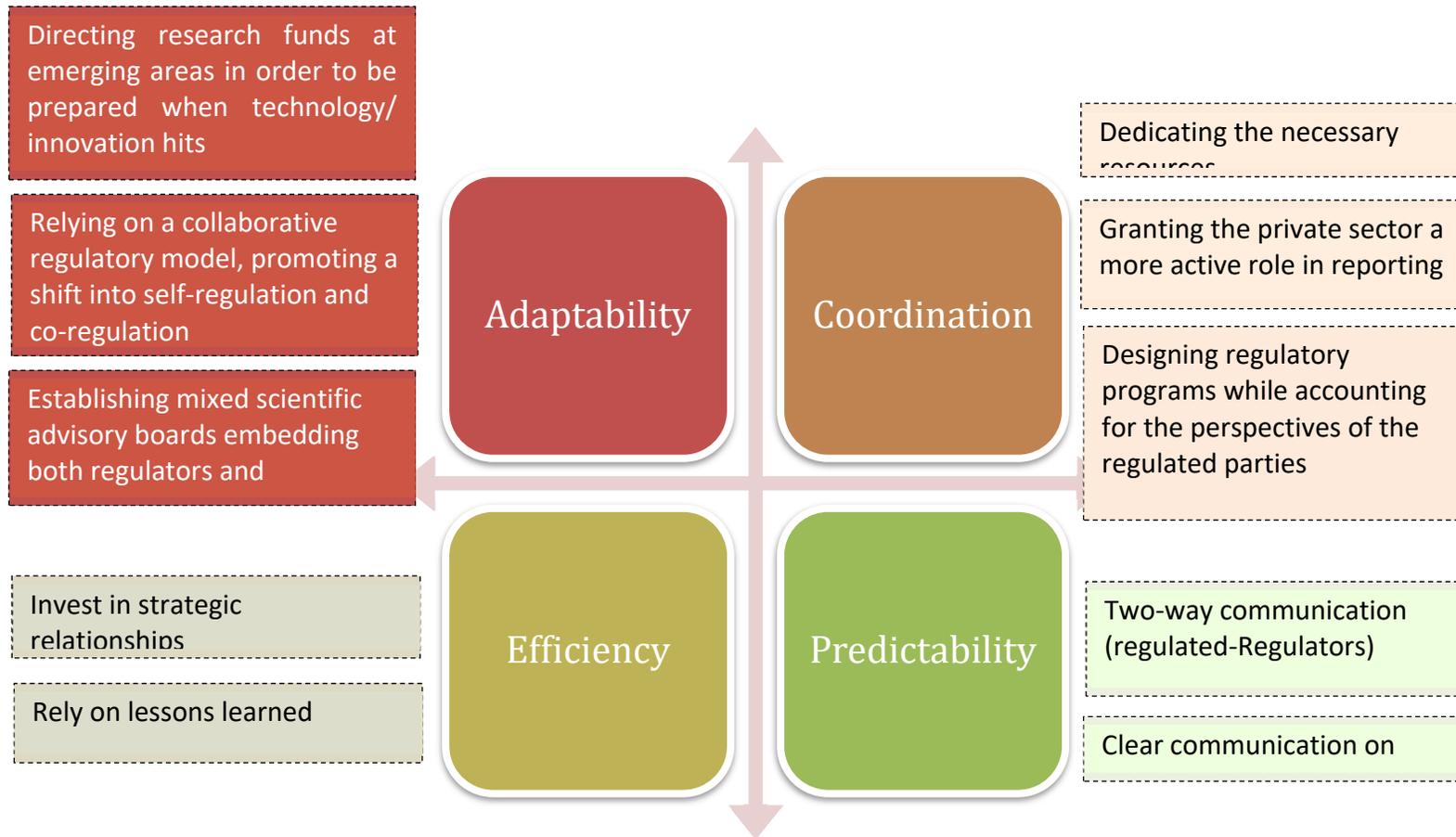
- There is an emerging toolkit of approaches to regulating for innovation that can be employed more broadly than at present.
- Cross-cutting challenges provide an opportunity to regulate to favour innovation through horizontal coordination across the federal/ provincial/ territorial and jurisdictions.
- Change in the US regulatory system at present is a strategic challenge for Canada.
- Performance-based regulation can more innovation-friendly than prescriptive regulation.
- Cost-benefit analysis remains an important tool to assess the merits of a particular regulatory approach.

To start the day, perspectives on the key issues were offered by practitioners and scholars forming the basis of a wide-ranging discussion. An important theme was the adaptability of the regulatory sector to emerging challenges and disruptions, while ensuring higher public trust. These ideas captured around four key dimensions of the conversation: adaptability¹, efficiency and predictability of regulation and coordination among regulatory regimes. Group discussion highlighted key priorities for the Government of Canada to consider in designing its regulation in the era of innovation. They have identified four core priorities addressing the four key dimensions. The participants' called for establishing mixed scientific advisory boards comprising both regulators and innovators. They praised the need to integrate the perspectives of the regulated entities when designing regulatory programs in order to ensure coordination. The

¹ The notion of “adaptability of regulations” emerged in the Critical Conversation when referring to the need for a regulatory regime to continually evolve given the high degree of uncertainty and emerging disruption in all sectors and fields. Under these conditions, the regulatory agencies must rely on adaptive management approaches that leverage on continuous monitoring and adjusting.

group identified the need to invest in relationships in order to increase the efficiency of any regulatory approach, maintaining communication between the regulators and stakeholders.

The RGI extends its sincere thanks to the presenters, participants and the rapporteur whose contribution has enriched the discussion as reflected in the report.



Welcome

Dr. Graeme Auld (Director of School of Public Policy and Administration (SSPA) at Carleton University) welcomed the participants to the 2018 Critical Conversation. He stressed the importance of the efforts of the Regulatory Governance Initiative (RGI), as a Carleton University initiative, in research, education and dialogue on regulation. He commended the RGI for leading the Certificate Program of Regulatory Leadership (CPRL) for its 5th year and launching the Career Development for Regulatory Professionals (CDRP) Program.

Professor Auld expressed his personal interest in this conversation topic as it links to his academic research. He published on the merits of non-statutory regulatory frameworks. This work has illuminated the potential for innovation when non-state actors can bring to the regulatory regime in the era of disruption. He commended the background paper and called upon the participants to discuss openly the challenges facing regulatory sector today and debate what regulation approaches are needed for innovation to address the emerging challenges.

Presentations

Dr. Robert Slater presented the agenda of the day, noting the changes that arose due to unseasonable weather. He welcomed the participants who representing the spectrum of the regulatory agencies in the Government of Canada, many with experience throughout the regulation lifecycle. Dr. Slater reminded everyone that the Critical Conversation provides a safe zone for discussion because it is observed under Chatham House rules.

In his presentation on *“The Trouble with Emerging Technologies”*, Dr. Marc Saner (University of Ottawa) provided a thought-provoking framework for the analysis of innovation and emerging technologies. He introduced the so-called “Collingridge Dilemma” A term introduced by the British academic, David Collingridge in 1960. Briefly, this posits that there is a trade-off between knowing the impact of a technology and the ease of influencing its social, political, and innovation paths. The information deficit implies that people do not know how to act because they have insufficient information. The ‘power deficit’ implies that people do not or cannot act as they do not possess the means to do so.

Superimposed on these deficits are two ideological perspectives, one optimistic that sees technology as a solution and the other pessimistic that sees technology as a problem. This produces a two-by-two quadrant with technology as a solution or problem and deficits in terms of either information or power, leading to certain types of action or lack of action. For example,

those who see technology as a problem and who have an information deficit will appeal to the precautionary principle to do nothing. On the other hand, those who see technology as a solution and who have an information deficit will nevertheless find no sound reason to stop innovation as the risk of non-action is greater.

Discussion Paper – Regulating for Innovation in an Age of Disruption

The Discussion Paper titled “*Regulating for Innovation in an Age of Disruption*” was authored by Jonathan Butler and Ian Currie from the Strategy, Research and Results Branch at Innovation, Science and Economic Development Canada (ISED). It was distributed to all participants prior to the meeting. The paper sets the context for the conversation by providing a thorough discussion of issues related to regulation for innovation in a period of data and technology-driven economy. The paper argues that governments and regulators must respond with greater agility to pace and nature of change in order to meet the societal. It attempts to do so while drawing on examples of the current state of the relationship between regulation and innovation in Canada and abroad.

The first section highlighted the policy drivers and lessons from past Canadian federal regulatory reform efforts, including reviewing recent developments in best practices from an innovation policy perspective. The second section presented examples of regulatory responses to disruptions in the six Economic Strategy Tables announced in Budget 2017, namely clean tech, clean resources, health/biosciences, agrifood, digital industries, and advanced manufacturing. The third section laid out directions for future federal regulatory reform in support of innovation.

The key theme of the paper is that periodic regulatory reviews and life-cycle approaches, though perceived as best practice, have not been able to influence the regulatory reform as have various shocks and macro drivers. The paper highlights that:

- Shocks to regulatory systems are a driver of specific regulatory reforms;
- When things go wrong, there is often an initial bias in favour of prescriptive regulation;
- Major areas of economic and social risk are no longer domestic, but global in reach;
- Technology by itself has not been a major driver of regulatory reform; and
- The best technical means to assess the costs and benefits of regulation is Cost-Benefit analysis (CBA).

The Discussion Paper, then, concludes by providing some suggestions to the regulatory community for regulation that promotes innovation:

- There is an emerging toolkit of approaches to regulating for innovation that should be employed more broadly than at present.
- Sector-specific challenges and global risks are opportunities for regulating for innovation.
- Common challenges provide an opportunity to regulate for innovation through horizontal coordination across the federal/ provincial/ territorial and sectoral regulatory jurisdictions
- Changes in US regulatory approaches poses a serious strategic challenge to regulate for innovation in Canada.
- Performance-based regulation is more innovation-friendly than prescriptive regulation.
- Cost-benefit analysis remains an important tool to assess the merits of a particular regulatory approach.

Panel Discussion

Following Dr. Saner's presentation, Dr. Slater invited Drs. Saner and Auld and Michael Presley to the podium and facilitated a panel discussion around the themes raised in the presentation and the paper. Key issues raised in the panel discussion are:

- The regulatory environment is dynamic, not static, and plans cannot be made for all contingencies. A regulatory regime should be continually evolving. Given the high degree of uncertainty and emerging disruption in all sectors and fields, players must rely on adaptive management approaches that leverage on continuous monitoring and adjusting.
- The implementation of regulatory frameworks is much more difficult than the design of these frameworks. The devil lies in the details. The design stage in setting regulations might not anticipate all uncertainties and predict the emerging situations that might arise;
- In situations which are win-win for all players, self-regulation can be effective. Unless there are market benefits, self-regulation does not pick up. Governments are well advised to leave these situations to the private sector given the limited government resources for regulation. In contrast, in situations when certain players lose, government regulation is generally required;
- A distinction can be made between the "regulation of innovation," which is relatively narrow and refers to regulatory measures influencing activities related to innovation (patents, R&D, diffusion of best practices techniques, etc.) and the "innovation in

regulation”, which is a broad notion and refers to any changes that affects how regulatory activities are designed and implemented to address emerging non-conventional challenges;

- Change to regulatory frameworks often need motivation and a crisis is often the shock that provides this motivation. As one commentator observed, "one should never let a good crisis go to waste." Obvious examples of such crises are: (a) the Global Economic Crisis of 2008-2009 that precipitated by problems in the financial sector, made a compelling case for financial sector reform; (b) the Lac Megantic disaster that spurred regulatory reform in the rail sector; and (c) the shock when legalizing cannabis that resulted in establishing a whole regulatory framework for this substance from scratch.
- Inconsistency between the federal and provincial/ territorial regulations is not always the main challenge. There are many similarities that regulators should learn from. Coordination across territories and sectors helps addressing common challenges.

Roundtable Discussions and Priority Ranking

Following the presentation and the panel discussion, Dr. Slater introduced the key discussion questions for the next session. Participants were asked to break into small groups to reflect and discuss four questions that address issues around the adaptability², efficiency and predictability of and coordination among regulations and regulatory regimes.

- Question 1 (Adaptability): How to catalyze regulations that accommodate emerging business models and technologies?
- Question 2 (Coordination): How to drive coordination between agencies and jurisdictions within Canada and internationally?
- Question 3 (Efficiency): How to improve the efficiency of regulations both in terms of



² The notion of “adaptability of regulations” emerged in the Critical Conversation when referring to the need for a regulatory regime to continually evolve given the high degree of uncertainty and emerging disruption in all sectors and fields. Under these conditions, the regulatory agencies must rely on adaptive management approaches that leverage on continuous monitoring and adjusting.

their development and implementation costs?

- Question 4 (Predictability): How to improve the predictability of regulations and regulators?

To take advantage of the diverse perspectives and expertise in the room, a mix of participants were assigned to each table. Each group spent around one hour debating and sharing perspectives. Group participants were then asked to identify key priorities for each of the four questions (barriers to be removed and/or opportunities to be realized). Among the various identified priorities, four were highly ranked; namely:

Themes	Key Question	Highly ranked priority	Rank Order
Adaptability	How to catalyze regulations that accommodate emerging business models and technologies?	Establishing mixed scientific advisory boards embedding both regulators and innovators	2 (36% of participants)
Coordination	How to drive coordination between agencies and jurisdictions within Canada and internationally?	Designing regulatory programs while taking into account the perspectives of the regulated entities	4 (18% of participants)
Efficiency	How to improve the efficiency of regulations both in terms of their development and implementation costs?	Invest in strategic relationships in order to increase the entities capability to predict	3 (33% of participants)
Predictability	How to improve the predictability of regulations and regulators?	Maintain a two-way communication between the regulators and stakeholders to educate and feed back into the regulatory process	1 (40% of participants)

Analysis of the group discussions

- **Question 1: Adaptability of regulations**

There was a consensus with regard the key drivers of adaptability. Participants identified a set of priorities, including (a) directing research funds at emerging areas in order to be prepared when technology/ innovation hits, (b) relying on a more collaborative regulatory model that promote a shift from government directive model toward self-regulatory and co-regulatory models³, (c) establishing fast-track mechanisms for “low risks” and “non-politically sexy” initiatives, and (c) establishing mixed scientific advisory boards including both regulators and innovators. The latter option was highly ranked (36% of participants ranked it high). It was among the most controversial priorities too. While 36% of the participants ranked it high and argues for promoting a proactive role of the private sector in setting regulations, opponents raised serious flags of potential risks and lack of clarity about how the mechanism works.



- **Question 2: Coordination among regulatory regimes**

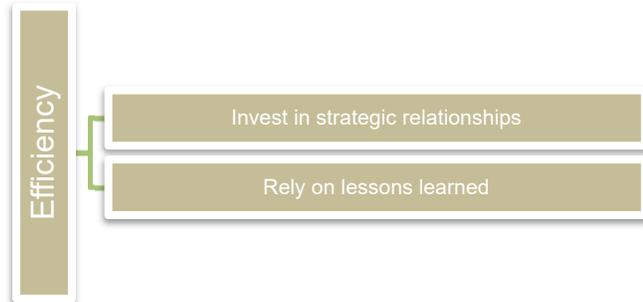
There was a general consensus that a key barrier to regulation innovation is the jurisdictional requirements, while the opportunities were praised (a) once resources are dedicated, (b) the private sector takes a more active role in reporting; and (c) designing regulatory programs while taking into account the perspectives of the regulated. The latter was a priority by 18% of the participants. There was disagreement from those opposed who were concerned about mechanism. The discussion went on to explore mechanisms for accounting for the regulated perspectives into designing regulations.



³ The participants praise a shift from a government directive model toward a more collaborative regulatory model that involves various government entities, private sector and civil society players and is outcome-based.

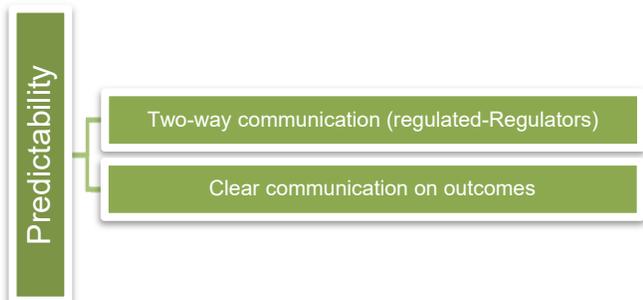
- **Question 3: Efficiency of regulations**

When addressing the question on efficiency of regulation in terms of implementation and costs, there was a general consensus on the need to (a) invest in strategic relationships in order to increase the capability of the regulated to predict and (b) to rely on lessons learned from the European approach by putting more risk analysis burden on industries. The former was highly ranked among the participants (33%).



- **Predictability of regulations**

The main priority identified by participants was the need to maintain a two-way communication between the regulators and other stakeholders to raise awareness, educate and feed back into the regulatory process. There was a consensus on the need for regulators to clearly communicate on the outcomes.



Promoting a two-way open and transparent communication proved to be the highly ranked priorities (supported by 44% of the participants).

Rapporteur's Feedback

Dr. Andrew Sharpe, founder and Executive Director of the Ottawa-based Centre for the Study of Living Standards (CSLS), provided an overall view of the conversation and roundtable deliberations. He acknowledged the excellent presentations, praised the lively discussions within the groups and appreciated the perspectives brought forward by both the presenters and participants. Dr. Sharpe provided a brief summary of Dr. Saner's main arguments and highlighted key take away messages from the debate.

Dr. Sharpe recognized that, from a public policy perspective, regulation is one of a number of options or tools that can be used to address a policy issue. Other policy instruments include

moral suasion, public ownership, legislation, taxation, and public spending. He reminded all participants that the strengths and weaknesses of all options should be examined and assessed when policy makers approach an issue. He advised those persons working in the regulatory area of the importance of being cognizant of different policy options besides regulations. He was delighted that this Critical Conversation stimulated that level of thinking among all participants to reflect on the need for regulation for innovation.

Annex 1: Speakers' Biographies



Opening Address

Dr. Graeme Auld is the Director and Associate Professor at the School of Public Policy and Administration. He holds a BSc in Forestry from the University of British Columbia, and a Masters in Forest Policy from Auburn University (USA) and a PhD in Environmental Politics from Yale University.

Graeme's research focuses on comparative environmental politics and policy, global environmental governance, and the rise of private governance and authority. Much of his work examines the formation, evolution, and impacts of non-state and hybrid forms of global governance across economic sectors. He also researches the design and efficacy of policy aimed at tackling global problems such as climate change.



Speaker & Facilitator

Dr. Robert Slater is an Adjunct Professor and Senior Distinguished Fellow in Environmental Policy at Carleton University and is the Executive Director of the Regulatory Governance Initiative. He is also President of Coleman, Bright and Associates, a consulting firm that operates internationally specializing in Sustainable Development issues, and a Senior Fellow with the International Institute for Sustainable Development.

Dr. Slater occupied several senior positions during a 32 year career at Environment Canada and was the Senior Assistant Deputy Minister for eight years. He was instrumental in establishing the National Roundtable on the Environment and the Economy, the International Institute for Sustainable Development and the UNU Institute for Water, Environment and Health.

He was appointed a Member of the Order of Canada in 2009.



Rapporteur

Andrew Sharpe is founder and Executive Director of the Ottawa-based Centre for the Study of Living Standards (CSLS). Established in 1995, CSLS is a national, independent, non-profit research organization whose main objective is to study trends and determinants of productivity, living standards and economic well-being.

Andrew holds a M.A. and Ph.D in economics from McGill University, a maitrise in urban geography from the Université de Paris-Sorbonne, and a B.A. from the University of Toronto. He has held a variety of earlier positions, including Head of Research at the Canadian Labour Market and Productivity Centre and Chief, Business Sector Analysis at the Department of Finance.

He is also founder and Editor of the International Productivity Monitor, co-developer (with Lars Osberg) of the composite Index of Economic Well-being, a consultant to the World Bank on labor market issues, and Executive Director of the International Association for Research on Income and Wealth, an international research association dedicated to the advancement of knowledge relating to income and wealth.



Speaker

Marc Saner is the inaugural Director of the Institute for Science, Society and Policy (since July 1, 2010), and an Associate Professor in the University of Ottawa Department of Geography.

Prior to this appointment, he served as Executive Director, Regulatory Governance Initiative, School of Public Policy and Administration, at Carleton University, and Director of Assessments and Executive Vice-President of the Council of Canadian Academies. Previously, Dr. Saner was a Director at the Institute on Governance where he built the Ethics and Risk Management Sector and co-managed the Technology and Governance Program. For the last decade, his primary interest has been multi-disciplinary work at the intersection of science, ethics and governance. He holds a PhD in Biology from the University of Basel, Switzerland (1991) as well as an MA in Philosophy from Carleton University (1999).

Dr. Saner publishes in peer-reviewed journals in the areas of technology ethics, bioethics, risk management, biotechnology and ecology and has been invited to speak at seminars, workshops and international conferences around the world. He was also appointed Adjunct Research Professor in Philosophy at Carleton University.



Speaker

Michael Presley was the Assistant Secretary, Regulatory Affairs, Treasury Board Secretariat of Canada from 2009 to 2014 before retiring from the public service to assume the duties of the Director, Certificate Program in Regulatory Leadership at the University of Ottawa. Prior to being appointed Assistant Secretary, Michael was the Executive Director of Regulatory Affairs, TBS. At TBS, his team was responsible for challenging departments to design regulatory proposals submitted for Governor in Council approval to ensure they complied with the Government's direction in terms of federal-provincial alignment, international cooperation and minimization of burden on industry while maximizing cost-benefit ratios. He also presented more than one thousand regulatory proposals to Treasury Board for approval. Much of Michael's career prior to joining TBS was spent at Agriculture and Agri-food Canada (from 1993 to 2007) and at Transport Canada (from 1986 to 1993). He began his career at the Public Service Commission (1984 to 1986).

Michael completed his political science and international studies undergraduate degree at Queen's University in 1982 before completing a Masters in Public Administration degree at Carleton University in 1984. Later in his career, he was a graduate of the first cohort of the Certificate Program on Public Governance and Leadership at the University of Ottawa's Odell House.

Annex 2: Agenda

- 8:00 a.m. Light Breakfast
- 8:30 a.m. Welcome Note by Dr. Graeme Auld - Director SPPA, Carleton University
- 8:40 a.m. Review of Agenda – Dr. Robert Slater
- 8:50 a.m. Regulating for Innovation in an Age of Disruption (Discussion Paper) – Innovation, Science and Economic Development (ISED)
- 9:10 a.m. The Trouble with Emerging Technologies – Dr. Marc Saner, University of Ottawa
- 9:30 a.m. Regulatory Mandates and Innovative Response: Application of Information Technology to meet the work of regulators - Steve McDonald, Thomson Reuters (Canceled due to unpredicted ice storm)
- 9:50 a.m. Plenary Discussion
- 10:20 a.m. Break and Refreshments
- 10:50 a.m. Introductions to Roundtable Work (Dr. Robert Slater)
Introducing the questions for the Round Tables
- 11:00 a.m. Roundtable Work and Priority Ranking
Identify the top three priorities to the questions
- 11:45 a.m. Plenary Discussion
- 12:15 p.m. Rapporteur's Report (Andrew Sharpe)
- 12:30 p.m. Closing

Annex 3: Participating Entities

Despite the unforeseen bad weather conditions, more than 30 participants representing the entire spectrum of the regulatory agencies in the Government of Canada (federal and local), with experience throughout the regulation lifecycle (problem definition, regulation design, regulation implementation, monitoring and evaluation and adjustment). The following agencies were represented:

Environment Canada, Agriculture and Agri-Food Canada, Canadian Food Inspection Agency, DFO, Alberta Energy Regulator, Health Canada, Canadian Nuclear Safety Commission, Justice Canada, Public Services and Procurement Canada, Office of the Superintendent of Bankruptcy Canada, Treasury Board Secretariat, Ministry of Transportation, Veteran's Affairs Canada, Indigenous and Northern Affairs Canada (INAC), Competition Bureau, Employment and Social Development Canada, Canada Revenue Agency (CRA), National Defence, Ministry of Labour, Carleton University, University of Ottawa, OSFI Canada, Smart prosperity, Community of Federal Regulators, B&P (Bereskin & Parr), Canadian Millers Association, Global Advantage Consulting Group Inc.

