Innovation Strategy Consultation: Cross Sector Synthesis & Summary

Introduction

As part of the National Conversation on Canada's Innovation Strategy initiative, the Canadian Science Policy Centre (CSPC) hosted three industry consultation sessions: 1) agriculture and agrifood, 2) advanced manufacturing and natural resources, 3) health, biosciences, digital and high-tech. The consultations aimed to gather insights for shaping a flexible and adaptive innovation strategy that addresses both current and future needs of Canadian industry. The discussion focused on three core topics:

Topic 1 - Emerging trends and challenges in the sector
Topic 2 - Designing an innovation strategy to adapt to the emerging trends and challenges
Topic 3 - Priorities for a national innovation strategy

This cross-sector synthesis and summary identifies the common and recurring themes across all sectors for each topic. It provides an overarching set of recommendations common across the three consultation sessions.

Emerging Trends and Challenges

Labor and Talent Shortages
Across sectors, labor shortages, particularly in skilled trades, technical roles, and specialized fields, were consistently identified as significant barriers. Each sector emphasized the need for talent and skills development, retention, and attraction, as well as specialized training programs that match evolving industry demands.

Regulatory Burdens
Across sectors, regulatory challenges were cited as significant barriers to innovation. Lack of clarity and consistency within the regulatory framework are causing delays, which impacts domestic and foreign investment and threatens competitiveness.

Capital and Scaling Constraints
Limited access to venture capital, high tax rates, and funding gaps are significant issues affecting SMEs and startups. Financial constraints hinder the ability of smaller firms to scale domestically, pushing some to seek foreign opportunities. Inadequate financial

support to enable sustainable scaling within Canada, especially in high growth sectors is on-going challenge.

Infrastructure Gaps
Inadequate infrastructure is seen as a barrier to growth across sectors. Agriculture needs better rural digital connectivity, health sciences require more wet labs and production facilities, and advanced manufacturing faces a shortage of manufacturing infrastructure to support large-scale production. These gaps hinder the ability to conduct R&D, commercialize innovations, and expand operations domestically.

Environmental Sustainability and Climate Adaptation
There was a strong emphasis on sustainability and climate resilience across sectors. Participants noted that most industrial sectors are fully committed to meeting carbon reduction, emission and sustainability policy goals, but need practical, economically viable strategies that balance environmental policy imperatives with the realities of competing in a global market.

Policy Misalignment and Lack of Coordination:
Policy misalignment, conflicting goals, lack of coordination within and across all levels of government and inadequate oversite, inadequate follow through and evaluation on policy implementation are key challenges in all sectors. Health and biotech sectors note that uncoordinated policies slow down processes like clinical trial approvals and AI regulation. In the agriculture sector, policies that lack the flexibility needed for practical application across diverse regions and scales of operation are a barrier to innovation.

Designing an Innovation Strategy to Address Challenges

Workforce Development and Skills Training
Developing a coordinated workforce strategy to address critical skill shortages is a priority. Public-private partnerships for apprenticeships, upskilling, and digital literacy programs are needed across all sectors. Closer industry-academia partnerships are crucial to ensure that training programs align with industry demands, enabling a pipeline of talent prepared for rapid technological advancements.

Adaptive, Innovation-Friendly Regulatory Frameworks
Modernization and harmonization of the regulatory system would address sector-specific challenges while supporting innovation, growth and competitiveness. Participants advocated for regulatory “sandboxes” as part of a more flexible regulatory environment, allowing controlled testing of innovations.

Public-Private Collaboration and Ecosystem Building
Each sector recommended strengthening public-private partnerships to foster collaborative innovation ecosystems, with a focus on translating research into market-

ready solutions. There is consensus that an innovation strategy should prioritize industry-driven ecosystem capacity building that brings together academia, industry, and government to address sector-specific commercialization challenges. Government procurement policies are critical to supporting domestic innovation.

Targeted Infrastructure Investments:
Investing in critical infrastructure across sectors was highlighted as essential to support innovation. Suggestions included expanding digital infrastructure in rural areas, building wet labs and specialized manufacturing facilities for health sciences, supporting scale-up, commercialization, pilot testing and demonstration infrastructure.

Sector-Specific and Regional Customization:
A sector-specific and regional approach to a national innovation was emphasized, recognizing that Canada's geographical diversity and industry-specific needs require tailored solutions.

Accountability, Transparency, and Coordination in Policy Implementation:
Participants across sectors recommended stronger oversight mechanisms, clearer accountability structures, and transparent metrics to evaluate policy implementation. Improved internal coordination within and across government departments would support more effective and sustainable policy outcomes.

Priorities for a National Innovation Strategy

Long-Term, Outcome-Oriented Goals
Each sector advocated for a mission-driven strategy with long-term goals, especially to address the lengthy timelines inherent in R&D and commercialization. The strategy should set broad, adaptive goals with sector-specific pathways to achieve these outcomes.

Enhanced Industry-Academic Partnerships for Commercialization
Participants emphasized the need for partnerships between academia and industry to bridge research and commercialization gaps, with a focus on creating pathways from discovery to market. Supporting entrepreneurship within universities, fostering spin-offs, and establishing industry-led innovation hubs were identified as key methods to translate research into market-ready solutions that lead to tangible economic benefits.

Streamlined and Consistent Regulatory Frameworks:
Overall, there is a call for regulatory frameworks to be more adaptive and aligned with industry goals to enhance Canada's competitiveness. Regulatory modernization is essential to support quicker project approvals, reduce costs, and foster alignment between regulatory standards and industry needs. Harmonized regulations across federal

and provincial levels were seen as crucial for enabling the successful commercialization of Canadian innovations.

Capital and Scaling Support for SMEs
Providing targeted financial support to enable SMEs and startups to scale domestically was seen as essential. Participants recommended creating more accessible funding mechanisms, such as grants, low-interest loans, and tax incentives, particularly for high-growth companies across all sectors. These measures would enable SMEs to grow and remain in Canada.

Public-Private Partnerships and Sector-Based Strategies
A sector-specific, collaborative approach to a national innovation strategy was widely supported. Effective public-private partnerships, along with sector-specific strategies, would allow for better alignment between government and industry priorities, ensuring that each sector's unique challenges and opportunities are addressed comprehensively.

Accountability and Follow-Through in Policy Implementation
Enhanced accountability measures and follow-through in policy implementation are needed to drive innovation. Effective implementation requires transparent metrics, regular evaluations, and a commitment to ongoing oversight. Enhanced coordination across government levels and departments is essential to maintain consistency and alignment with industry needs, creating a supportive environment for innovation. Participants recommended that policies be better aligned and coordinated within and across government departments to reflect the realities of each sector.

Focus on Climate Goals and Sustainability:
A national innovation strategy should prioritize alignment with Canada's climate commitments, emphasizing sustainable practices across sectors. This includes supporting climate-smart agriculture, clean technologies in advanced manufacturing, and sustainable health innovations. Participants highlighted that policies should balance sustainability with economic feasibility to ensure adoption and long-term viability.

Conclusion & Recommendations

Workforce Development and Skills Training
- Develop a coordinated workforce strategy focusing on apprenticeships, digital literacy, and specialized training for evolving technological needs.
- Tailored programs should be implemented to increase completion rates in trades, support skill transitions, and ensure new talent pipelines in areas like AI, digital health, and precision agriculture.

Regulatory Reforms to Support Innovation

- Streamline and modernize regulatory processes to be more innovation-friendly, reducing approval times, simplifying compliance, enhancing transparency and improving regulatory adaptability.
- Introduce regulatory “sandboxes”, where new technologies can be piloted in a controlled environmental prior to regulatory approval.
- Develop sector-specific regulatory frameworks that address unique sector challenges. Coordinate standards across federal and provincial government and create metrics for regulatory effectiveness and efficiency.

Ensure Policy Alignment, Transparency and Accountability

- Improve policy alignment with industry needs and strengthen internal oversight, transparency, and follow-through in policy implementation.
- Implement clear accountability structures to measure progress and ensure that promising policies translate into practical actions.
- Set up cross-sector working groups that include government, industry, and academia to guide policy development and implementation.
- Establish regular reviews and transparent reporting mechanisms to evaluate policy outcomes, making adjustments as needed to stay aligned with industry requirements.

Investment in Critical Infrastructure:

- Prioritize infrastructure investments, including supporting digital infrastructure for data-driven farming, wet labs for biotech, and manufacturing facilities for scaling production in advanced manufacturing.
- Such investments are foundational to enhancing Canada’s capacity for domestic innovation.

Support for SMEs and Startups:

- Establish funding mechanisms specifically designed to help startups and SMEs scale domestically.
- This could include venture capital incentives, tax credits, grants, and low-interest loans to alleviate financial barriers and reduce the need for companies to seek foreign investment. This will allow SMEs and start-ups to overcome growth and expansion challenges, making it easier for them to innovate and scale within Canada.

Strengthening Public-Private Partnerships:

- Build robust public-private partnerships to create innovation ecosystems that support the entire lifecycle of innovation, from research to commercialization.
- These ecosystems should foster collaboration between academia, industry, and government.
- Support industry-led innovation hubs and centers of excellence that align academic research with industry needs.
- Create incentives for partnerships that focus on commercialization, ensuring that R&D translates into tangible market benefits and economic growth within Canada.

Long-Term, Mission-Driven Approach

- Implement a mission-oriented approach to a national innovation strategy that incorporates a long-term vision and clear objectives.
- A national innovation strategy should seek a balanced policy environment that fosters competitiveness while promoting sustainability.
- Recognizing each sector's unique challenges and strengths within this framework is critical.

Sector-Based Strategy and Regional Customization

- Adopt a sector-specific and regional approach to address Canada's geographical diversity and unique needs of Canada's industrial sectors

Commitment to Sustainability and Climate Goals

- Canada's innovation strategy should align with climate and sustainability goals, encouraging sectors to adopt environmentally friendly practices that reduce carbon footprints.
- This can include supporting sustainable practices in agriculture, green technologies in manufacturing, and eco-friendly production processes in health.