The Innovation Multiplier: Building Canada's Competitive Edge

by Dr. Robert G. Cooper, Michelle Jones, and Brian Hartman

Executive Summary

Canada's Innovation Imperative

Canada invests heavily in R&D but lags in commercialization output[1]. Dr. Robert Cooper, top innovation scholar and Professor Emeritus, McMaster University, warns: "*If Canada isn't getting enough of a bang for its buck on its innovation spending, this could indicate insufficient support, resources, and capability for commercialization and scaling*." [3] Dr. Cooper notes: "*The stakes couldn't be higher—innovation and new products are the engines of growth and prosperity. When innovation investment fails to deliver results, businesses don't just stagnate; they lose their competitive edge, revenues plummet, and their capacity to reinvest and expand crumbles. This isn't just an economic concern—it's a threat to Canada's future competitiveness on the global stage*."

To close this gap, leaders must integrate three powerful enablers:

- Optimize Canada's 100+ Incentive Programs to de-risk innovation
- Embed a Stage-Gate® Governance Framework to de-risk investment
- Leverage AI PRISM to de-risk commercialization and pick winners

In reaction to Prime Minister Mark Carney's release of the Canada Strong 2025 Budget, three of Canada's leading authorities, Dr. Robert G. Cooper, Michelle Jones,

and Brian Hartman, discuss how to empower and equip Canadian businesses to lean into a more ambitious innovation commercialization strategy by integrating three enablers to create what they call **Canada's Innovation Multiplier** effect.

The New Reality

Canada's Changing Market Conditions Demand Bold Product Leadership

Canada's economic landscape is undergoing a period of transformation. Global shifts in supply chains, technological innovation, sustainability pressures, and evolving consumer expectations are reshaping how Canadian businesses must operate. These changes are not merely challenges, they are opportunities for visionary leaders to chart new paths, develop innovative products, and position Canada as a global competitor beyond its traditional trade relationships.

The New Reality: Canada in a Diversifying Global Market

For decades, Canada's economy has been deeply integrated with the United States. While this partnership remains vital, emerging market dynamics are pushing Canadian businesses to diversify their export strategies. Rapid growth in regions such as Asia-Pacific, Europe, and the Middle East offers fertile ground for Canadian innovation, particularly in clean technology, agri-food, advanced manufacturing, and digital services, including artificial intelligence.

Domestic market conditions are also evolving. Canadian consumers are increasingly seeking products that align with their values: value for money, sustainability, local sourcing, and technological sophistication. These demands are encouraging companies to rethink growth strategies, new products, materials, and business models.

In this environment, boldness is essential. Companies that embrace innovation, especially through the development of new products and processes, will be best positioned to thrive.

Innovation as Catalyst

Innovation as the Catalyst for Growth

Developing new products for both the Canadian market and international audiences requires investment in research, experimentation, technological development and commercialization. While the path of innovation can be risky, it is the foundation of long-term productivity and competitiveness – a capability Canada must build.

Whether it's a manufacturer creating smart, connected products; a food producer developing functional ingredients; or a cleantech company engineering sustainable energy solutions, innovation drives productivity and differentiation.

However, there is a dark side to innovation; a high failure rate for those who ignore practices that are proven to create winning products, processes and technologies.

Why New Products Fail

Canadian innovators face a major challenge when developing new products—most of them fail! Industry data indicates that approximately 70% of development projects are either terminated during development, often after substantial resource investment, or fail commercially in the marketplace. Reasons include a lack of understanding of customers' needs, failure to execute due diligence and homework, and a deficient launch strategy…or simply pushing ahead with a doomed project.

Research into new-product winners versus losers has identified best practices that make the difference. They include simple practices such as employing a tougher governance go/kill decision-process, building in voice-of-customer methods, and iterative development. When properly implemented, these proven practices directly address the root causes of product failure.

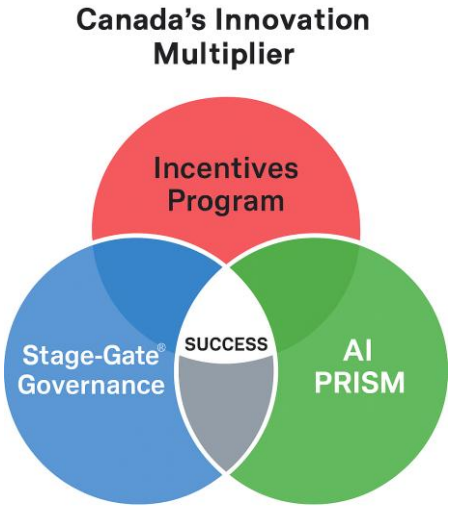
The strategic imperative is to make these best practices more accessible to Canadian innovators through a structured, repeatable process that guides projects from initial concept through successful market launch. The Stage-Gate framework represents such a systematic approach to innovation management.

The Right Ingredients

Success lies at the center of three forces.

Combining three key enablers to Build Canada's Competitive Edge:

- Optimize Canada's 100+ Incentives throughout the entire process
- Embed a Stage-Gate® Governance Framework to de-risk investment
- Leverage tools like AI PRISM to de-risk commercialization early, before expensive development and commercialization begins.



Together, these create **Canada's Innovation Multiplier**, accelerating market success and global competitiveness.

The Right ingredients to Revolutionize Canada's New Product Success

Canada's Incentives Program

Canada has one of the most generous innovation incentives systems in the world—over 100 federal and provincial programs, including SR&ED and IRAP, that fund technological advancement. The programs primarily reduce technological risk by supporting R&D activities including experimental developments and proof-of-concepts and has produced some impressive technologies. Notable examples include Esri Canada, which has become a global leader in smart mobility technologies, and Deep Trekker, which capitalized on government incentives to advance the development of its underwater remotely operated vehicles for international exploration and research. Yet too few of these funded projects have ever become successful commercial products[2]. Simply put, Canada needs more commercial wins to propel a sustainable *Canada Strong* economy. The missing link isn't more money—it's management discipline.

Stage-Gate Governance Framework – Winning at New Products

There is no innovation governance model with a better success track record than the '*Made-in-Canada*' Stage-Gate® Framework. Despite being developed in Canada by Canadian Dr. Robert Cooper during his tenure as Business Professor at McGill (Montreal) and McMaster (Hamilton) Universities, it was the U.S. market that fully embraced it and propelled Stage-Gate to an industry standard. Last year, the U.S. Product Development and Management Association (PDMA) celebrated Stage-Gate as one of the most substantial methodologies to have impacted U.S. innovation and commercialization performance. Additionally, a recent PDMA study reveals that 54% of firms globally use Stage-Gate for innovation and product development.

The Stage-Gate Framework performs a vital role in innovation success. It reduces financial and portfolio risk with its unique, incremental, gated go/kill governance design. By directing investments through a structured yet flexible process pathway from idea to launch, only the most promising projects continue advancing. Stage-Gate organizes winning habits into a process that when repeated, builds organizational commercialization capability. This disciplined approach not only surfaces the most meritorious projects, but it also enables business leaders to analyze the entire portfolio of projects across several best practice dimensions: alignment to strategy; sufficiency; value maximization; resource optimization; number of active projects for the resources committed, and balance of risk, horizon,

and cadence. As innovation success improves, the portfolio grows, the Stage-Gate Framework scales and the organization expands its innovation capability.

How the U.S. Turned Stage-Gate into a Commercialization Engine

Since the 1990s, Stage-Gate has been institutionalized across the U.S. industry — from consumer goods and healthcare to aerospace, defense and energy.

Major corporations (3M, Caterpillar, Dow, GE, Johnson & Johnson, Microsoft, P&G and many others) and U.S. Departments (DOE, DOD, GAO) adopted Stage-Gate enterprise-wide to manage innovation and development portfolios worth billions.

The U.S. R&D tax credit and federal SBIR/STTR programs complement this by funding early-stage R&D while businesses use Stage-Gate for rigorous governance and market alignment as projects mature.

This integration created a national innovation culture focused on disciplined commercialization — translating technological discoveries into global products faster and more reliably than most nations.

As a result, the U.S. consistently converts a significant proportion of R&D spending into commercial output compared to Canada, demonstrating that strong governance frameworks amplify the impact of public and private R&D investment[1].

Can Canada enjoy a similar success story? These authors believe so.

AI PRISM – Likelihood of Commercial Success Predictor

Enhancing R&D investment decision-making represents a fundamental component of innovation strategy optimization. Current research indicates that organizations are correct for only 30% of their new product investment decisions.

AI PRISM is an advanced artificial intelligence (AI) decision-support tool developed by Cooper that substantially improves the predictive accuracy for identifying commercially viable new product opportunities. AI constructed the PRISM model through comprehensive analysis of success factors that differentiate winning products from market failures. Then the tool evaluates proposed development initiatives against these validated success criteria, providing systematic assessment of project strengths, weaknesses, risks, and the probability of commercial success, thereby enabling more informed strategic investment decisions.

A New Solution for Canada - Turning Funding into Commercial Success

Canadian businesses are uniquely positioned to benefit from three key enablers, pioneered by three of Canada's innovation management and incentives experts.

When combined, these three powerful ingredients create **Canada's Innovation Multiplier**:

- Funding de-risks the innovation
- Stage-Gate de-risks investment
- AI PRISM de-risks commercialization and picks winners.

Challenge	Solution Ingredient	Result
Financial exposure	Stage-Gate® is a gate governance (go/kill) framework with pathway activity playbooks that guide a diverse range of project types from concept to market launch	Optimize resource allocation and investment
Commercial uncertainty	PRISM is a tool that reduces commercial risk by leveraging AI, proprietary success benchmarks, and algorithms to establish a project's predictability of market success score	Reduce market failure risk
Technological uncertainty	Canada's Incentive Program offers 100+ programs to support Businesses investing in their competitiveness with new products/technologies	De-risk technology feasibility

At the intersection of these three forces lies success — measurable returns from innovation, faster commercialization, and stronger competitiveness at home and abroad.

The Case for Integration in Canada

Leading U.S. companies have been integrating government R&D incentives with Stage-Gate with great success for many years. This past year, with the support of Penn State University's Institute for the Study of Business Markets, member companies also piloted Cooper's AI PRISM tool on early-stage projects to predict Likelihood of Commercial Success- insights which are vital for business leaders making tough go/kill investment decisions.

IRAP leaders in Ontario and Quebec have also integrated Stage-Gate with select projects for over a period of 10 years now, and more recently, AI PRISM on a

project-by-project basis. The evidence-based practices and commercial discipline of Stage-Gate drive risk down, while improving the odds of success.

Canada has a unique opportunity to accelerate the adoption of the Innovation Multiplier, equipping Canadian businesses with the tools they need to innovate products that can compete and succeed on the world stage. Tremendous alignment exists today:

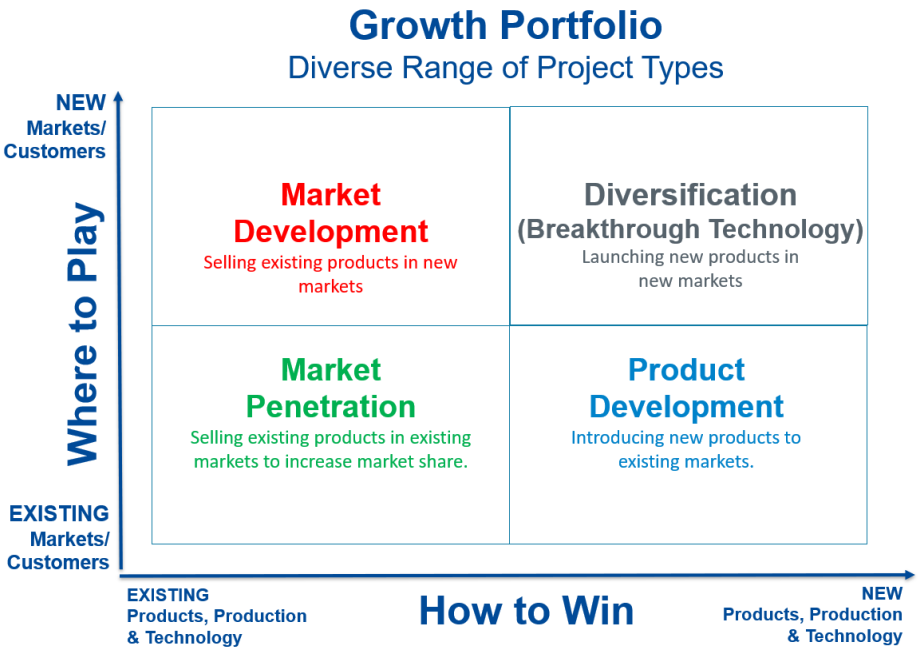
- *Documentation*: Stage-Gate outputs map directly to SR&ED requirements
- *Strategic timing*: SR&ED and IRAP align naturally with the Early Stages (Discovery → Development), while commercialization grants fit Stages 4–5 (Validation → Launch).
- *Higher ROI:* Combining financial governance and public funding offsets can improve innovation ROI by 25–40%.
- *Policy alignment*: Integrating structured frameworks like Stage-Gate and AI PRISM into national incentive programs we estimate could significantly impact Canada's commercialization success[3].

From R&D Nation to Commercialization Nation

Canada already invests heavily in innovation. To translate that investment into prosperity, we must connect funding with disciplined execution across the range of project types we see in the growth portfolio of a typical Canadian business, from market penetration to market developments, to new product developments, and the technology developments that enable true breakthroughs. Each unique capability (see the four quadrants in the Growth Portfolio below) can be accelerated with best practice activities organized into repeatable Stage-Gate Pathways, supported with an AI-based Innovation Multiplier coach.

The Stage-Gate Governance Framework is purpose-built and applied flexibly to a diverse portfolio of projects. This streamlines and focuses the role of business leaders.

By embedding Gate Governance into portfolios and projects supported by SR&ED, IRAP, and related incentive programs, and enriching go/kill decision gates with AI PRISM predictability analytics, Canada can evolve from an R&D nation to a commercialization nation.



The Diversity of the Typical Canadian Business Growth Portfolio

1. Market Penetration – Tim Hortons

Tim Hortons frequently uses loyalty programs, seasonal promotions, and menu bundling to deepen its presence in Canada's coffee and fast-food market. Its "Roll Up to Win" campaign is a classic market penetration tactic aimed at boosting repeat visits and customer retention.

2. Product Development – Lululemon Athletica

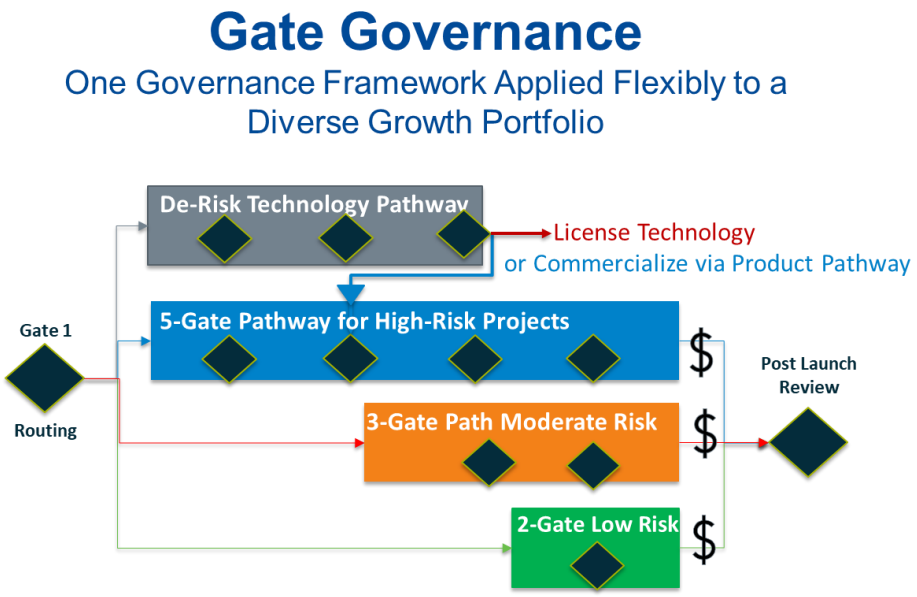
Lululemon expanded its product line beyond yoga apparel to include footwear, personal care items, and technical outerwear. These innovations target its existing customer base while enhancing brand loyalty and increasing profitable revenue.

3. Market Development – Shopify

Shopify has aggressively expanded into international markets like Southeast Asia and Latin America, offering localized versions of its e-commerce platform. This move brings its existing product to new geographic regions and small business communities.

4. Diversification – Canadian Natural Resources Limited (CNRL)

CNRL has diversified into carbon capture and storage (CCS) and renewable energy projects, moving beyond traditional oil and gas. These ventures represent new products in emerging markets focused on sustainability and environmental innovation.



Leadership Teams gain commercialization discipline and speed using one Gate Governance Framework applied flexibly to each project type in their portfolio. Best practice stage activity pathways are right sized in process rigor for the risk/context of each project type. Each gate (go/kill decision point) equips the decision team with the information and insights they need to judge the merit of the opportunity against discriminating criteria. Leaders decide immediately whether to purchase the next stage or stop the project and reallocate the resources to a new project.

Enriching Gates with Artificial Intelligence

AI is poised to revolutionize all aspects of business, particularly new product development. Currently, more than 40 unique AI applications exist for AI in New Product Development (NPD). The varied nature of the applications—from doing market research to undertaking engineering design iterations to planning the market launch—is exciting and somewhat overwhelming.

Despite documented benefits reported by industry leaders including Siemens, Nestlé, and General Electric, AI adoption in NPD remains limited, particularly in North America. China, India, and Germany demonstrate leadership in implementation, while small and medium enterprises—critical innovation drivers in the Canadian economy—exhibit notably slower AI adoption rates. Key barriers include implementation costs and risks, management knowledge gaps and skepticism, and deployment challenges.

AI has great potential for strengthening project governance frameworks and gates. AI-enabled tools address critical information deficiencies by conducting

comprehensive market analysis, competitive intelligence, technical feasibility assessments, and customer insight research. These systems can also generate professional business cases—an area where most organizations and project teams experience significant challenges. Advanced AI applications extend to concept generation, engineering design development, and digital twin modeling, enabling rapid evaluation of multiple design alternatives. By doing these tasks faster and cheaper than humans, AI directly addresses fundamental weaknesses that contribute to project failure, while providing decision-makers with enhanced information quality for better gate reviews. Integrating models such as AI-PRISM synthesize these diverse information sources to predict commercial success probability, thereby strengthening the overall decision framework.

How the SR&ED Program Fuels Canadian Innovation

Canada's Scientific Research and Experimental Development (SR&ED) program remains one of the most powerful tools available to help businesses innovate and grow. Administered by the Canada Revenue Agency (CRA), SR&ED provides tax credits and refunds for companies that invest in research and development (R&D).

The program supports businesses of all sizes, from early-stage startups to established enterprises, by offsetting a portion of eligible R&D costs such as wages, materials, overhead, contract expenditures, and with recent changes reintroducing specific capital and lease costs. This financial support helps reduce the risks associated with innovation and enables companies to reinvest in new projects.

Key benefits of SR&ED include:

Tax Credits or Refunds: Federally, eligible businesses can recover up to 35% of qualifying expenditures, with enhanced incentives for Canadian-controlled private corporations. Recent changes have also allowed Canadian public companies to recover refundable credits of 35% too. There are also complementary Provincial and Territory tax credits.

Support for a Wide Range of Activities: SR&ED is not limited to lab-based science. It applies to experimental development, applied research, and technological advancements across manufacturing, software, clean tech, and more.

Scalability and Flexibility: Companies can claim SR&ED annually, integrating it into their long-term innovation strategy and portfolio of projects.

Global Competitiveness: By lowering the effective cost of R&D, Canadian firms can develop world-class products that compete successfully in international markets.

Policy Recommendations

- Mandate and embed proven commercialization frameworks like Stage-Gate in SR&ED and IRAP-funded projects[4].
- Create a national commercialization scorecard to demonstrate progress[4].
- Incent adoption of AI tools like PRISM in funded innovation portfolios.

Call to Action

The government of Canada has expressed its desire to empower its business community and leaders to take ambitious steps to grow organically through technological innovation and product commercialization both domestically and to new international markets.

To enable and support Canadian businesses to excel and succeed through this transition, we advocate the development of a uniquely Canadian solution, **Canada's Innovation Multiplier** – the integration of Canada's Incentives Program, Stage-Gate and AI PRISM with the express purpose to support and equip Canadian businesses with the tools they need to build successful innovation and commercialization portfolios.

Now is the time to harness support, drive experimentation, and ensure Canada's place as a global innovator.

Supporting Evidence

The insights and comparisons in this article are given by the following sources:

1. **How the United States and Canada Compare on R&D and Innovation** – ITIF
   A detailed analysis of R&D spending, commercialization efficiency, and policy frameworks across both countries.

2. **Bridging the Innovation Gap to Stay Competitive** – Checkpoint Research
   Highlights Canada's structural challenges in converting R&D into economic output.

3. **OECD Science, Technology and Innovation Outlook 2023**
   Provides international benchmarks on R&D governance, investment, and innovation outcomes.

4. **Innovation Policy Recommendations** – Council of Canadian Innovators
   Offers actionable insights into improving Canada's innovation ecosystem.

About the Authors

Dr. Robert G. Cooper is recognized globally as one of the world's top innovation scholars. His groundbreaking benchmarking studies, AI research, widely implemented Stage-Gate® model, and industry leadership have influenced millions of business leaders to pursue innovation with success, contributing to billions of dollars in wealth creation. A prolific author, Bob, has published 12 business books, including the best seller *Winning at New Products,* and 170 articles in top journals. Bob is an ISBM Distinguished Research Fellow with Penn State Smeal College of Business, a Professor Emeritus with DeGroote School of Business, McMaster University, and a Crawford Fellow of the Product Development and Management Association. Bob also co-founded Stage-Gate International, a consultancy devoted to supporting business leaders who pursue innovation excellence. Connect on LinkedIn.

Michelle Jones is a Senior Partner at Stage-Gate International and is the world's leading expert in designing innovation management frameworks for businesses and organizations across all industries. She specializes in designing hybrid models grounded in evidence-based practices that are reflective of the organization's unique strategy and culture. She has implemented Stage-Gate into 500+ organizations, more than anyone in the world. She is an author, consultant to industry and advisor to business leaders driving transformational business change and growth, through innovation. Michelle has an MBA in International Business from Richard Ivey School of Business, University of Western. She is NPDP certified with Product Development and Management Association and PMP certified with McGill University.

View Full Bio. You can message her at Michelle.jones@stage-gate.com and connect with her on LinkedIn.

Brian Hartman is one of Canada's top experts in the National and Provincial Incentives Program and Innovation Ecosystem. His involvement has spanned 30 years, including representing Ontario and Biotech Canada in advocating for changes to the SR&ED program. He has earned one of industry's highest success rates for matching much needed resources to his hundreds of business clients to support their mission-critical technology, product and process innovations. He founded and successfully led one of Canada's fastest growing national incentives consulting practices and is recognized for the innovative operations technology he developed to improve program eligibility and matchmaking. Brian is also a high-tech entrepreneur and innovator, with several patents filed. He studied Computer Technology at Mohawk College, spent a decade as VP of Technology at an international logistics powerhouse and CIO implementing cutting-edge technology systems in Ontario Hospitals.

Call to Action
From concept to coalition: advancing the Innovation Multiplier in Canada.

Should this framework move forward, we'll be seeking collaborators across industry, academia, and government. If you'd like to be part of that conversation, please get in touch.

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