It is time to re-imagine Canada's STI ecosystem

Canada, and indeed the world, is facing the confluence of many serious challenges. But there are also many dynamic opportunities ahead for those nations that best respond and adapt. Climate change, bio-diversity loss, emerging and disruptive technologies, pandemics, mass migrations, geopolitical conflict, wealth redistribution, supply chain disruptions, inflation, low productivity, (un)affordability, societal polarization, mis/disinformation and more are all at play.

The term polycrisis[1] has been coined to capture this notion of simultaneous, interdependent challenges with global, national and local impacts. Multi-dimensional solutions appear to be needed, solutions that will require multiple time horizons to have effect[2], that will span election cycles on the one hand but will also drive change in policy priorities within cycles on the other. So how to respond?

Many OECD nations are taking action to transform their Science, Technology and Innovation (STI) ecosystems to help mitigate polycrisis risks and seize opportunities[3]. And what of Canada? Can we re-imagine our ability to sustain the economic, security, environmental and social well-being of the nation in the face of today's realities, aided through an STI ecosystem reset?

Across human history – and most certainly over the past 200 hundred years or so - humankind has been able to innovate its way to new economic, health and social outcomes that have generally improved the human condition[4]. The question facing Canada is the extent to which past approaches to innovation can contribute solutions to the suite of challenges we are facing today given this unprecedented pace of change and level of complexity. How do we ensure that Canada's STI ecosystem is up to the challenge?

There have been many studies conducted over the past 10-15 years to examine Canada's STI ecosystem and its effectiveness in providing the foundation of knowledge, technology and talent to support sustainable Canadian economic growth, improved health, equitable social cohesion and security. Despite this on-going effort, there are broad indications that Canada and Canadians are not seeing a commensurate return on this investment to improve their lives[5].

> **"We can't solve problems by using the same kind of thinking we used when we created them." – Albert Einstein.**

What might a new approach look like? The polycrisis is impacting Canadians today in many ways that preclude simple solutions. Our ability to innovate at the scale and pace with which challenges emerge is one of the keys to successfully navigating this global polycrisis. However, to mobilize and focus Canada's STI ecosystem requires new thinking from governments, from industry, from academia and from society. A re-imagined STI ecosystem has the potential not only to mitigate

the social, economic, environmental and security risks exacerbated by the polycrisis but also to capture the benefits of unique solutions for all Canadians. To achieve this will require adjustments to the ambition that citizens demand of it, with an acknowledgement at the outset that for many citizens, the nation's STI community has a deficit in relevance, credibility and trust.

It is timely to provide a more holistic assessment of Canada's need and capacity to innovate – whether with a technology, business, policy and/or social lens – and to do so with a fresh perspective of the ambition to which our STI ecosystem must aspire. We suggest that placing the needs of citizens as the guiding beacon[6] will lead us down a path towards this new way of thinking.

As a starting point, we propose a framework for a re-imagined ambition that Canada should demand of the performance of our STI ecosystem through three lenses: purpose, scope and uptake.

Purpose. Canada's STI ecosystem should be positioned as a strategic national asset, with shared goals to help Canadians adapt, manage the risks and capture the opportunities from the intersecting social, economic, technological, environmental and security dimensions of the strengthening polycrisis.

Scope. As a nation, Canada must ensure its STI ecosystem enables citizen-centered innovation at the needed scale and pace by generating and harnessing knowledge, technology and talent that respond to the challenges and opportunities of the polycrisis.

Uptake. Its outputs are adopted through policies, regulations, jobs, products, services, critical infrastructure that, when taken together, creates a resilient and adaptable response that improves the quality of life of citizens and provides a sustainable and secure future for all.

Where from here? We suggest that a broad conversation is needed – among traditional STI ecosystem stakeholders, with the public generally and with Canada's younger generation specifically. We must commit to a collaborative approach to build consensus on the new level of ambition required. We need to understand what and who need to change – and most importantly – how to do so to meet this ambition.

Like beginning any journey, our first step is to agree on a common destination. Fortunately, to us that destination is clear – it is to improve the lives of all Canadian citizens, by meeting their needs for a stabilized climate and cleaner environment, better healthcare, affordable housing, equitable social services, sustainable energy and transportation, safe communities and inclusive economic growth.

Whether or not you agree, let's begin the dialogue!

To learn more about the ICI's Canada Innovates Project and how we may collaborate, please visit **www.icicanada.org** or contact us at **info@icicanada.org.**

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About ICI's Canada Innovates Project Team

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