



Experts advocate for sector-based innovation strategy

Panel: So What Now? The Path to Science, Technology and Innovation Competitiveness

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Panelists: **Ken Knox**, Chair Science, Technology, and Innovation Council (STIC) /and CEO, Knox-Vannest Inc.; **Bogdan Ciobanu**, Vice-President, National Research Council of Canada's Industrial Research Assistance Program (IRAP); **Sophie Forest**, Managing Partner, Brightspark; **Marc Fortin**, Assistant Deputy Minister, Science and Technology, Department of National Defence (DND) and CEO, Defence Research and Development Canada (DRDC); **Arvind Gupta**, Professor and former President, University of British Columbia

Takeaways and recommendations

- ✓ STIC's State of the Nation Report offers a data-rich foundation for moving the conversation on innovation to a new level
- ✓ Government can be a catalyst or convenor for shifting from a national to a sector-based system of innovation
- ✓ A Canadian SBIR program is a favoured approach to enhancing innovation. Current Canadian approach of incubators, accelerators and government procurement is not achieving the desired results
- ✓ A culture change is required to reduce the levels of risk aversion endemic in all sectors
- ✓ Policy needs to move from a dominant focus on start-up firms to the scaling of companies with the greatest potential for global competitiveness

The policy issue: As a small nation, Canada must develop a systems approach to picking niches where it can succeed in a globally competitive environment. With hundreds of programs designed to stimulate innovation, there's little coordination among them, resulting in assistance being spread over a wide spectrum of disciplines and technologies with less than optimum impact.

With its high level of public support for post-secondary research, policy makers need to encourage a structured sector-based approach to maximizing promising university discoveries and ideas, said Gupta.

"We are doing well but we're slipping. Although we are investing, other countries are investing faster and we're no longer in the top five in post-secondary expenditures on R&D. It's something we have to watch," said Gupta. "It's a two-way flow. **If we want our businesses to be more innovative we need good ideas to flow out of the universities and we need good talent ...** We have to take a systems approach and link together various players and be globally competitive"

The stakes are high. Canada is slipping in most of the innovation, productivity and competitiveness indicators, according to the latest data compiled by the Science, Technology and Innovation Council (STIC). Impetus must come from a recognition that the status quo is not good enough. Evolving towards a systems approach requires overcoming systemic risk aversion in business, government and academia and boosting collaboration internationally to access 95% of the world's knowledge generated outside of our borders, said Ciobanu.

"It's hard for a company to collaborate with another company on the other side of the world but this is one of the best ways to get access to market," said Ciobanu. "We don't partner internationally as well as we should. It starts with R&D and opens up to large commercial opportunities. That's what we want for our companies."

The options: The wealth of base data and analysis in STIC's biannual report—*State of the Nation: Canada's Science, Technology and Innovation System*—offers a solid basis for taking action. Fortin said policymakers and STI practitioners need to move past data collection and focus more on action.

"We're going to have to roll up our sleeves and have a different conversation from the one where we're not producing the right skill sets or business is not investing enough or that venture capital is too risk averse," said Fortin. "We need to go past that ... lock ourselves up in the same room for a little while and get out of our comfort zones to some extent."

For those who contend that Canada lacks the entrepreneurial culture required for success, analyzing companies that have been successful in scaling and penetrating global markets is instructive. Forest says **the common denominator among individuals helming successful firms is a healthy dose of paranoia.**

"They need to be paranoid. The most successful people are afraid, they're always running and they think they're never going to be innovative enough. They may be way ahead of the pack but the CEO still doesn't sleep at night," said Forest, who has been investing in successful companies for more than 20 years. "Getting out of the comfort zone is a big problem. I visited Israel and was impressed with the level of innovation. They don't have any choice. They don't have energy or even water. We're too comfortable with our natural resources. We need to lose sleep at night and be totally paranoid that ... we're missing that and that's why we don't build those big companies. We're too comfortable."

Canada, along with most other countries, has been implementing a range mechanisms for improving innovation and competitiveness. More recently, governments and universities have been establishing incubators and accelerators for small companies to take their products and processes to the next level. These are in addition to several programs managed by the Networks of Centres of Excellence. Not everyone agrees this is the best way forward.

"We have way too many incubators. The problem not the number, it's the quality. They need to add value. We start a lot of companies in Canada, we don't grow them and that's where the problem lies," said Forest. "We started an incubator at Brightspark and we stopped it because really good entrepreneurs don't need them."

A growing number of policymakers are advocating a Canadian version of the U.S. *Small Business Innovation Research (SBIR)* program, which encourages small businesses to engage in federal R&D, enhancing their entrepreneurial spirit while meeting the needs of the government. They argue that a Canadian SBIR would be more effective than the procurement approach now being promoted by the federal *Build in Canada* Innovation Program.

There was caution, however, that a Canadian SBIR program should not be managed by the Industrial Research Assistance Program, as favoured by the new federal government.