

THE URGENCY OF THE FIRST LINK: CANADA'S SUPPLY CHAIN AT BREAKING POINT, A NATIONAL SECURITY ISSUE.

ALAIN DUDOIT

The Bourgogne Reports are summary documents on issues of general interest produced by CIRANO researchers and visiting fellows. They help to stimulate reflection and public debate on topical issues.

The Burgundy Reports are synthesis documents written by CIRANO researchers and invited fellows on issues of general interests. Their aim is to encourage discussion and public debate on current issues.

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ISSN 1701-9990 (online version)



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Since retiring from the Canadian public service in 2008, Alain Dudoit has been applying and sharing his extensive international experience in innovation partnerships, his many professional achievements and an impressive business network in Canada and abroad.

Immediately following his retirement from the Canadian government, he was appointed Associate Vice-Principal (Strategic Innovation Partnerships) at McGill University. Since then, Alain Dudoit has worked in the private sector as an independent entrepreneur and strategic advisor in international business and innovation network development for a number of companies and organizations in Canada, California, China, and Europe.

In 2017, Alain Dudoit completed his term as senior advisor to the QG100 Network, which he has developed and managed since its creation in 2010: a private group of Quebec business leaders supporting their global market development strategies. The success of this Network led Alain Dudoit to help create a similar organization, OG100, in Ontario.

He has also been a lecturer on North American business management and international competitiveness at McGill's Faculty of Management and a guest lecturer at ENAP. He is also a strategic advisor to the Milken Institute Santa Monica, a member of the Los Angeles Commission on Foreign Relations, and a member of the Governance Committee, Center for Accelerated Growth, Quebec Government Office in New York. Alain Dudoit is one of the main architects of Scale AI, an innovation supercluster on supply chain and artificial intelligence. He is regularly invited to speak on national and international innovation panels.

During his long and fruitful career in the federal public service, Mr. Dudoit has held a number of senior positions: at the Privy Council Office; at the Canadian International Development Agency; at the Department of Finance; and at the Department of Foreign Affairs and International Trade. He has served Canada abroad as Minister Counsellor (Commercial and Economic Affairs) at the Canadian Embassy in Paris; Ambassador to the Czech Republic and the Slovak Republic, resident in Prague; Ambassador to the Kingdom of Spain and the Principality of Andorra in Madrid; and Consul General in Los Angeles.

FOREWORD AND ACKNOWLEDGEMENTS

CIRANO has identified "[Meeting the challenges of supply chains](#)" as the theme for part of its scientific activities in 2023. This choice is inspired by the context in which we find ourselves as a result of the pandemic and current issues linked to labour shortages, climate challenges and the economic situation linked to the war in Ukraine.

The choice of this theme is particularly relevant and follows on from the decision taken by CIRANO in early 2022 to create an applied research [Pole on Data Science for Trade and Intermodal Transportation](#). This initiative follows a series of consultations with Transport Canada and a number of relevant stakeholders. It is based on [a cross-cutting, multidisciplinary analysis](#) previously published by CIRANO on the challenges and opportunities for interoperability and data sharing in the St. Lawrence-Great Lakes (SLGL) trade corridor. The Pole aims to use the latest developments in data science to bridge the gap between trade, transportation, and their economic and environmental impacts to support public and private sector decision-making on major supply chain challenges.

This Burgundy Report entitled "***The urgency of the first link: Canada's supply chain at breaking point, a national security issue***" is dedicated to CIRANO, to Nathalie de Marcellis-Warin, President, and CEO of CIRANO, and to the team of the Pole on Data Science for Trade and Intermodal Transportation under the responsibility of Thierry Warin, full professor at HEC Montréal, researcher and CIRANO Fellow. I would like to thank Marcelin Joanis, Robert Lacroix, Jean-François Lépine, Molivann Panot, Luc Pinard, Joelle Zoghbi and Manon Blouet for their comments, suggestions, and professional contributions. I remain solely responsible for any errors or omissions in this text.

This Burgundy report was prompted by an urgent call from the [Final Report of the National Supply Chain Task Force 2022- Action. Collaboration. Transformation](#) ("ACT"):

*« The time for bold action is now.
The time for intense collaboration is now.
The time for generational
transformation is now. Let us begin. »*

Notes: The original text of this report is in French. The quality of the translation and its consistency with the original language text are the sole responsibility of the author. In the event of any discrepancy between the original document and the translation assisted by DeepL-Pro Translator software, only the text of the original document is valid.

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RÉSUMÉ / ABSTRACT

Abstract

The creation of an intelligent supply chain is now an urgent national security priority that cannot be achieved without the joint mobilization of various stakeholders in Canada. It is not, however, an end in itself: the achievement of a single, competitive, sustainable, and consumer-focused domestic market should be the ultimate outcome of the national effort required to collaboratively implement the recommendations of three complementary public policy reports published in 2022 on the state of the supply chain in Canada.

Québec's geostrategic position is a major asset and gives it a critical role and responsibility in implementing not only the [Final Report of the National Supply Chain Task Force \("ACT"\)](#), but also the recommendations contained in the [Report of Phase 2 of the Pan-Canadian Competitive Trade Corridors Initiative](#), published in February 2022 by the Council of Ministers Responsible for Transportation and Highway Safety (COMT) and those contained in the report of the House of Commons Standing Committee on Transport, Infrastructure and Communities published in November 2022, "[Improving the Efficiency and Resilience of Canada's Supply Chains](#)".

The supply chain challenge is vast, and it will only become more complex over time. Governments in Canada must act together now, in conjunction with collaborative efforts with our allies and partners, notably the United States and the European Union, to ensure supply chain resilience in the face of accelerating current and anticipated disruptions, geopolitical conflict and natural disasters.

The mobilizing approach towards a common data space for Canada's supply chain is inspired by the "[St. Lawrence Advantage](#)" smart economic corridor vision, builds upon the experience gained from various initiatives and programs implemented in Canada, the United States and Europe, and integrates them as appropriate. Its initial implementation of the St. Lawrence Great Lakes Strategic Trade Corridor will facilitate future access to and sharing of data across the Canadian supply chain in a reliable and secure manner.

The accelerated joint development of a common data space will be a game-changer not only in terms of solving critical supply chain challenges, but also in terms of the impetus it will generate in the pursuit of fundamental priorities in Canada, including the energy transition.

This Burgundy report offers a four-part summary:

1. An overview of a background characterized by numerous consultations, strategy announcements, measures, and mixed results.
2. A cross-analysis of the recommendations of three major and complementary public policy reports at the federal level, as well as the Quebec strategy, l'Avantage Saint-Laurent.
3. An analysis of the fundamental issues of data mobilization capacity, execution, and underutilization.
4. Some operational solutions for moving into "Action, Collaboration and Transformation" (ACT) mode.

Keywords : supply chain; common data space; trade; national security; governance.

To cite this document :

Dudoit, A. (2023). The urgency of the first link: Canada's supply chain at breaking point, a national security issue. (2023RB-04, Rapports bourgogne, CIRANO.) <https://doi.org/10.54932/CXWF7311>

Other documents related to this publication :

- [Executive summary](#)
- [Résumé exécutif](#)
- [French version of the report](#)
- [Appendix: Recommendations from the three 2022 policy reports](#)

CANADA'S SUPPLY CHAIN AT BREAKING POINT: A NATIONAL SECURITY ISSUE

The construction of a [third link between Quebec City and Lévis](#) continues to attract the attention of political decision-makers and the public. However legitimate this high-profile debate may be, it cannot and must not overshadow the strategic issue of national security posed by the state of Canada's supply chain and its central link, the [multimodal transport and trade corridor of the St. Lawrence and the Great Lakes: our first link](#).

This continental gateway and its extension into a North American trade corridor are at the heart of a binational region comprising two provinces, eight states and hundreds of municipalities, large and small, on both sides of the border. The St. Lawrence-Great Lakes (SLGL) region generates 30% of the gross domestic product (GDP) of the United States and Canada and is home to 31% of the population of both countries.

The Ontario market alone accounts for almost 2 million containers a year and could increase by 50% by 2035 thanks to manufacturing policies and recent developments in the automotive sector. Quebec's logistics ecosystem makes it possible to import and export containerized goods to serve nearly 75% of the country's industrial capacity. The anticipated increase in this volume will make it possible to meet growing demand, offering a solution that is both fluid and cost-effective for meeting the needs of businesses, particularly towards Europe and the Indo-Pacific markets.¹

The fallout from the pandemic has shown that decades of offshoring, protectionist measures, cost-cutting in pursuit of efficiency and a better bottom line have unacceptably weakened Canada's supply chain, as well as that of our major American, European, and Asian partners.

A survey carried out by CIRANO in early summer 2022 on "supply chain risks: reality and public perceptions" revealed that **80%** of Quebec manufacturers said they had been faced with supply chain problems and had had to delay their orders or even increase their prices (Manufacturiers et Exportateurs du Québec, 2022).

The results of this survey, conducted under the responsibility of Thierry Warin, show that **63%** of Quebec respondents consider that supply chain issues have worsened during the period under review.² The history of Quebec, like its future, is closely linked to the St. Lawrence River. It enjoys an enviable geostrategic position as one of the main gateways to the North American continent³ and is a powerful vector for economic, social, and environmental development.

¹ Source: [Montreal Port Authority](#), 30 March 2023- Marin Imbleau

² For full results, see: Warin T. (2022). Risques liés aux chaînes d'approvisionnement : réalité vécue et perceptions de la population du Québec (2022PE-07, CIRANO), <https://doi.org/10.54932/DMIK1689>

³ For more information, see [Portrait québécois du transport des marchandises](#) of the Ontario-Québec Continental Gateway and Trade Corridor (2013)

Recent events are accelerating the forces driving a vast and unpredictable realignment of global relations. Russia's invasion of Ukraine has brought Canada and its G7 partners to impose far-reaching sanctions and export controls with extraordinary speed. The ripple effects of war, such as shocks to supply chains, energy markets and global food systems, are exacerbating other distant crises in West Africa and South Asia.

The current geopolitical trajectory is highly uncertain and perilous. Trade tensions, particularly with China, have reached a critical point and are likely to lead to a more aggressive attitude on the part of the United States for the foreseeable future, with a risk of increased friction in the transatlantic relationship.

Regional synergies and trust-based partnerships will determine who is competitive and able to build sustainable prosperity.

We cannot ignore these strategic issues and dissociate ourselves from the international initiatives underway, as demonstrated by the recent measures taken by the Canadian government with regard to various Chinese companies. **The March 2023 federal budget contains 48**

references to supply chain challenges and a series of new measures to address them. This budget is the latest attempt to respond to two fundamental changes in the global economy: the energy transformation underway to build clean economies and the carbon-neutral industries of tomorrow; and the reduction of our economic dependence on autocratic regimes.

These disruptions, which have occurred in a very short space of time, confirm the critical importance of adapting public policies accordingly. They also underline the pivotal role of governments, which alone are in a position to take the exceptional measures to mobilize production and supply capacity required by the gravity of the situation.

The private sector, although a key economic player in the supply chain, does not voluntarily provide everything that is needed in the national interest. The primary role of companies remains to maximize profits and shareholder value, and to rationalize and globalize their operations.

The World Economic Forum's Global Risks 2023 [report](#), published in January, forecasts a decade of disruption, degradation, and impossible choices. More than 80% of the experts consulted in the preparation of this report expect continued volatility over the next few years, with multiple shocks accentuating divergent trajectories. The most serious risks in the short term are structural changes in the economic and geopolitical landscape that will accelerate the other global threats we face over the next decade.

"Canada's transportation supply chain is approaching breaking point. Major disruptions over the past two years have highlighted new and long-standing problems that must be addressed now, before our country's reputation as a reliable trading partner is further tarnished..."

The downside risks to the outlook remain very high, and the likelihood of a hard landing has risen sharply according to the "[rocky recovery](#)" outlook shared by the **IMF** in April 2023. With supply chains disrupted and geopolitical tensions rising, the risks and potential benefits and drawbacks of geo-economic fragmentation are at the heart of the economic policy debate. According to the IMF, this fragmentation may reshape the geographical dynamics of foreign direct investment and may affect the global economy.

It is against this backdrop of increasing instability that the final report of [the National Supply Chain Taskforce 2022 \("ACT"\)](#) takes on its full significance. This latest contribution in a [long series](#)⁴ of studies and strategies sounds the alarm and underlines with force and conviction the triple urgency of "**Act, Collaborate and Transform**":

It is not just Canada's reputation that is at stake. Its ability to resume economic growth, to successfully complete its energy transition, to ensure its increasingly threatened internal cohesion and the vitality of its democratic institutions in the face of a worrying loss of public confidence are also at stake.

According to the most recent version of the Edelman Canadian Confidence Barometer (2022), **53%** of Canadians say they trust the government, **down six points** from the previous year⁵.

Confidence in almost all institutions has fallen drastically since May 2020⁶. This loss of confidence is compounded in 2023 by a 6% fall in economic optimism in Canada from 34% in 2022 to 28%. While noting that **the best results are achieved when business and government work together**, the Edelman Global Confidence Barometer 2023 highlights the lack of confidence in societal institutions.

The critical situation of the Canadian supply chain and its repercussions are not confined to the transport sector alone, vital though that sector is. It directly challenges all federal government departments and agencies, as well as provincial authorities. Creating a resilient supply chain has become an urgent national security priority for policy makers and industry in Canada. It is one of the key sources of Canada's international competitiveness.

It is not, however, an end in itself: the achievement of a competitive, sustainable, and consumer-focused single internal market should be the first outcome of the national enterprise that the ACT recommendations imply. The supply chain and the value chain are key aspects of many industries, including agri-food, automotive, manufacturing, technology, and many others. The supply chain is responsible for the efficient delivery of products, while the value chain aims to create a unique value proposition for customers and end-users.

⁴ For more information, see Sources and references for a select list of reports and policy statements.

⁵ Source: [Edelman Confidence Barometer 2022: Trust in Canada](#)

⁶ Source: [2023 Edelman Trust Barometer Global Report](#);

In the current context, the essential federal-provincial undertaking to create a single domestic market in Canada requires the urgent implementation of a **national project** that supports the balance between, on the one hand, the flexibility, efficiency, and security of our supply chain and, on the other hand, the existential energy transition, the growth of our domestic market and our international commitments.

To achieve this, the relationship between Canadian industry and government must change, in particular by consolidating the various initiatives and strategies and by closer cooperation and collaboration between public and private players. The technology-driven nature of global competition requires a reset in the way Canadian policy makers and business leaders engage in defining and achieving common strategic priorities based on the best available and commonly shared data.

*"In the remarks you made to the State of Emergency Commission in November 2022, you rightly noted that our security as a country is built on our economic security and that, if our economic security is threatened, our entire security is threatened..."*⁷

...Canada must not be the weak link in the economic security chain with our trading partners and allies... To this end, Canada must demonstrate the seriousness it attaches to safeguarding and protecting our integrated networks, supply chains and infrastructures..."

The urgent appeal of the National Supply Chain Task Force expressed in these four short sentences is eloquent. It captures in a few words the collective mobilization that must be undertaken if we are to escape from the current complacency:

*"The time for bold action is now. The time for intense collaboration is now.
The time for generational transformation is now.
Let us begin".*

In their letter of transmission to the Minister, the signatories of the final report of the national "ACT" task force stress twice:

- the urgent call for action to address the **crisis** in the transport supply chain, and
- the imperative for the Government of Canada and transport sector stakeholders to join forces to resolve **the current crisis...**

The term "**crisis**" in the supply chain is used about ten times in task force document, whereas the two other public policy reports published in the same year, 2022⁸ and the 2023 federal and Quebec budgets, do not use it in the numerous references to supply chain issues that they all contain.

⁷ Letter to Finance Minister **Chrystia Freeland** from Goldy Hyder, President and CEO, Canadian Business Council : [Recommendations for Budget 2023](#) January 19, 2023

⁸ For more details, see the second part of this Burgundy report.

Quebec's budget plan anticipates continued improvement in supply chains, which should lead to a slight strengthening in domestic demand but does not rule out the possibility that a worsening of geopolitical tensions could prolong the disruption in supply chains.

These different assessments show that we have entered a prolonged period of instability and insecurity, which some describe as a "**permacrisis**"⁹.

In such a context, the resilience of Canada's supply chain - our first line of defence against the multiplication of shocks and disruptions and our essential tool for responsible economic development - has become a critical national security issue. It provides ample justification for mobilizing and pooling the resources of public and private stakeholders, as this Burgundy Report seeks to highlight.

⁹ Source; [Responsive government survey A global analysis of civil service responsiveness and agility](#), Global Government Forum in partnership with PA Consulting 2023

A BACKGROUND CHARACTERIZED BY NUMEROUS CONSULTATIONS, PUBLIC STATEMENTS, STRATEGIES AND MEASURES WITH MIXED RESULTS AT THE FEDERAL LEVEL

1. AT FEDERAL LEVEL

1.1 Transport 2030

The consultation conducted by the ACT Task Force at the initiative of Transport Minister Omar Alghabra is certainly not the current government's first; his immediate predecessor Minister Marc Garneau led [ten roundtable consultations](#) from May to November 2016, in each of Canada's major regions, to hear different perspectives on key issues and priorities in this vital economic sector. The feedback from this consultation was intended to help define how to improve Canada's transportation system for the next 20 to 30 years.

These intensive consultations, six years in the making, highlighted a number of deficiencies and bottlenecks in this network that is vital to the Canadian economy, including: inefficient cost practises that undermine Canada's ability to compete in the global marketplace; insufficient investment in intermodal transport infrastructure; a lack of innovation in policies and regulations; little creativity in improving the efficiency of supply chains; and increasingly unavailable transport data! These conclusions are similar to those reached in 2022 by three separate reports that are the subject of the cross-analysis included in this Burgundy report.

The federal government's response to these pan-Canadian consultations was presented by Minister Marc Garneau to the Board of Trade of Metropolitan Montreal on November 3, 2016, on the occasion of the release of "[Transport 2030, its strategic plan for the future of transportation in Canada](#)"¹⁰.

The fifth component of "Transport 2030" targets [trade corridors and global markets](#). The main objective of this part of the current strategy is to improve Canada's transport network in order to get products to market and stimulate the Canadian economy.

To this end, the federal government is committed to supporting :

- Transporting goods and people, through an infrastructure investment of more than \$180 billion over twelve years, as part of the Invest in Canada Plan.
- Use new methods of data collection and analysis.
- Ensure that data is available to all those who operate, monitor, analyze and use the transport network.

¹⁰ For a summary of the vision, themes and objectives of the plan, consult the [Transport 2030 infographic](#).

- Look for new ways to finance transport infrastructure projects, in collaboration with other levels of government and the private sector.
- Invest in infrastructure to address bottlenecks in key trade corridors, including rail corridors.
- Improving the transparency of the rail transport supply chain.
- Adopt a more balanced approach for railway stakeholders.
- Supporting a more competitive and efficient rail sector.
- Ensure actions are aligned with government priorities, including Canada's Progressive Trade and Investment Plan; the Pan-Canadian Framework on Clean Growth and Climate Change; a national innovation agenda.

1.2 Deployment of Budgetary Measures 2017-2022

Budget **2017** made a significant commitment to trade and transport priorities, including: \$1.9 billion for the National Trade Corridors Fund; at least an additional \$5 billion provided through the Infrastructure Bank of Canada; \$50 million to improve information, data and analysis related to trade and transport in Canada, leading to the creation of the Canadian Transportation Data Centre.

Budget **2018** provided \$6 million over the next three years to the Canadian Transportation Agency to support its modernization initiative. In the fall 2018 Economic Statement, Transport Canada was allocated \$13.6 million over three years, starting in 2019, to improve transportation data and accelerate the implementation of the Canadian Transportation Data Centre.

The Economic Statement also confirmed the adoption of a comprehensive and strategic approach to reducing freight congestion and seizing new opportunities along Canada's main trade corridors through the following measures:

- **Accelerating infrastructure spending** - Investments in seaports and along the busiest rail and road corridors will ease transport capacity constraints, opening up new commercial opportunities for Canadian companies to get their products to international markets.
- Supported by an accelerated investment of \$773.9 million over five years, the Fund will prioritize projects that deliver the greatest economic benefits, based on improved transport data and reviews of the key challenges for business supply chains.
- **Improving transport data** - Better access to transport data will help shippers optimize their routes and help governments better target investments to achieve the greatest improvement in the fluidity of supply chains.

Budget **2021** recapitalized the National Trade Corridor Fund with an additional \$1.9 billion to support trade infrastructure projects over the next four years, for a total allocation of \$4.2 billion over eleven years.

The **2022** budget provided Transport Canada with \$603.2 million over five years, starting in 2022-2023, broken down as follows:

- Funding of \$450 million over five years, starting in 2022-2023, to support supply chain projects through the National Trade Corridors Fund, which will facilitate the movement of goods through Canada's transportation networks.
- This funding is in addition to the 4.2 billion awarded to the fund since 2017. The Transport Minister will rename the fund to reflect the government's focus on supply chains.
- Funding of \$136.3 million over five years, starting in 2022-2023, to develop industry-driven solutions that will use data to make supply chains more efficient, building on the success of initiatives such as the West Coast Supply Chain Visibility Program. 19 million of this will come from existing resources.
- Funding of \$16.9 million over five years, starting in 2022-2023, to make Canada's supply chains more competitive by eliminating red tape, including working to ensure that regulations for different modes of freight transportation (e.g. marine and rail) work effectively together.

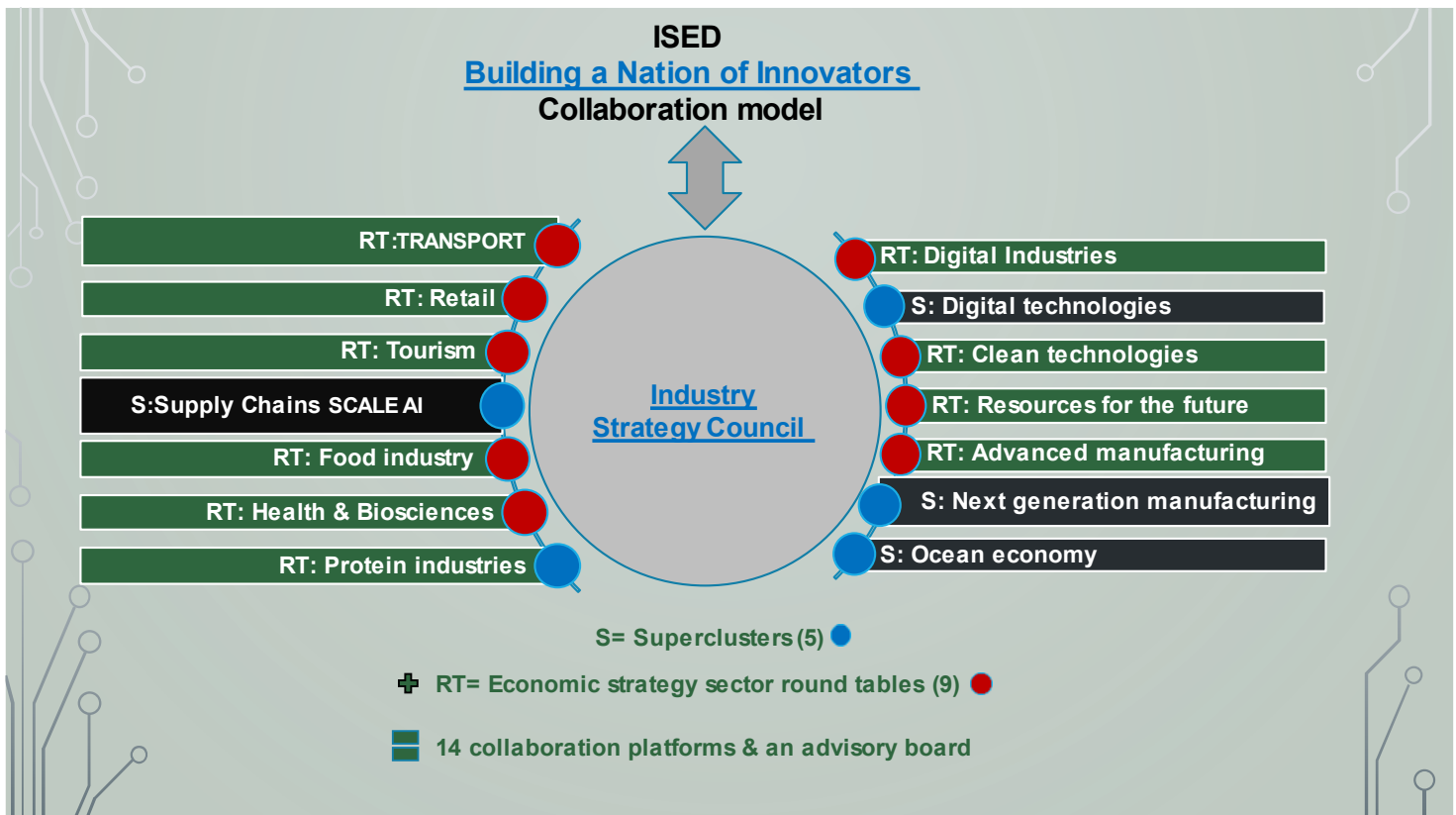
The investments announced in Budget 2022 should also complement the government's ongoing work through the **National Supply Chain Task Force** with industry, associations, and experts to examine key pressures and make recommendations on short- and long-term measures to strengthen the efficiency, fluidity and resilience of transportation infrastructure and the reliability of supply chains in Canada.

1.3 Deployment of innovation-focused initiatives

This panoply of budget measures deployed since 2017 to address supply chain challenges is part of the government's ambitious growth plan, "[Building a Nation of Innovators](#)", to establish a digital and sustainable economy. This plan, led by **Innovation, Science and Economic Development Canada (ISDE)** includes:

- The initial creation of [six Economic Strategy Tables](#) . Their founding mission was to develop a new model of partnership between industry and government aimed at transforming Canada's economic strengths into global competitive advantages. They are chaired by industry leaders and focus on six key sectors: advanced manufacturing; agri-food; clean technologies; digital industries; health and life sciences and clean resources of the future:
 - The Economic Strategy Tables have put forward an ambitious plan for long-term innovation-led growth of the Canadian economy. Their recommendations are summarized in the report published in September 2018: "[The innovation and competitiveness imperative: seizing opportunities for growth](#)".

- A seventh economic strategy sector table dedicated to tourism dates from the March 2019 federal budget. The creation of two new tables on the retail and **transport** sectors dates from 2020, when the establishment of the Industrial Strategy Council was announced. It is not clear what role this transport sector table will play.
- The Five [Innovation Superclusters](#) Co-Investment Initiative (**ISI**), designed to foster the growth and development of Canada's most promising regional innovation ecosystems including [Scale AI](#), **Canada's AI-Powered Supply Chains Cluster**. Budget 2022 confirmed an additional contribution of \$750 million over five years for these global innovation clusters in Canada.
- To date, the Government of Canada has invested nearly \$2 billion in global innovation clusters to continue to strengthen their ecosystems and position Canada in the global marketplace.
- The recommendations arising from the strategic tables were taken up and developed in the [Industry Strategy Council's](#) October 2020 report: "[Restarting, Rethinking Prosperity for All Canadians: An Ambitious Growth Plan for Building a Digital, Sustainable and Innovative Economy](#)". This document of more than 140 pages deals substantially with the supply chain issues present in all the priority sectors identified in Canada and the measures to be taken to resolve them. The following graphic illustrates the collaborative model that appears to be emerging from these initiatives.



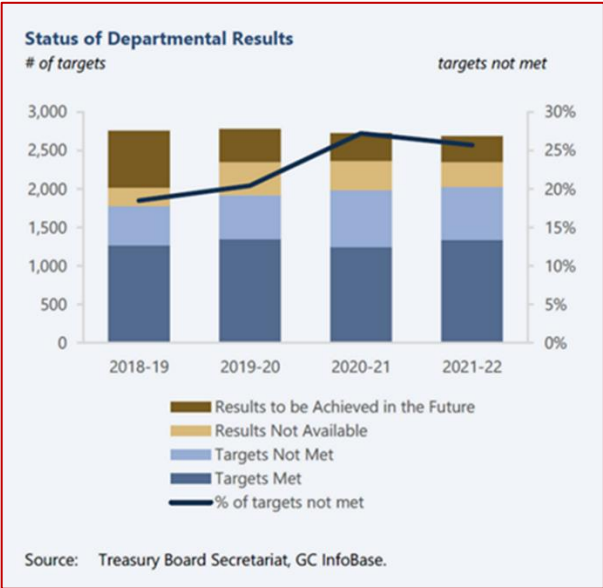
This brief overview reveals a proliferation of public statements, programmes and initiatives, the results of which, as outlined in the following section, are not obvious. Some observers have described the situation as "chaos" ¹¹

1.4 Comments on results achieved so far.

This abundance of plans, strategies and announcements¹² strongly supports the need identified in the "ACT" report to unify federal responsibility and authority for supply chain management across federal departments.

The recommendations and measures put forward by the "ACT" Task Force lead us to conclude that the **nine economic strategy tables**, including one on **transport**, the **five innovation superclusters**, including one specifically on [the supply chain](#) (Scale AI), and the industry Strategy Council, to name but a few initiatives, are not yet producing the results expected of the Government of Canada and its public and private sector partners.

This conclusion is supported by the report¹³ from the **Parliamentary Budget Officer (PBO)** in Ottawa on the Government's Spending Plan and Main Estimates for 2023-2024: analysis of **Departmental Performance Report (DPR)** data over the **last four years** shows that each year, on average, almost a quarter of performance targets are not met. In addition, one tenth of the targets are not accompanied by results and one third are accompanied by results to be achieved at a later date. **As a result, less than 50% of the objectives are systematically achieved in any one financial year**, depending on the PBO:



¹¹ For more information, see a quote from Robert Asselin, Senior Vice-President of Policy at the Business Council of Canada and former Budget Director for Bill Morneau; article published in the Globe and Mail : [How the Liberals' multibillion-dollar tech plan created 'chaos' instead of growth](#) ; January 20, 2023.

¹² This Burgundy report offers only a representative but partial sample of the strategies announced over this 5-year period.

¹³ [The Government's Expenditure Plan and Main Estimates for 2023-24](#); Office of the Parliamentary Budget Officer, Ottawa, Canada, March 3, 2023

Transport Canada's [2021-2022 Departmental Results Report](#) provides some general information on the results of this key department for supply chain management such as:

- A new \$50 million targeted call for proposals under the National Trade Corridors Fund has been created to immediately relieve supply chain congestion at Canadian ports.
- The task force's recommendations will contribute to the development of a national supply chain strategy, as outlined in the 2022 federal budget.
- Thirty-three projects that have received federal contributions totalling more than \$795 million. The project's aim to relieve supply chain congestion at Canadian ports, strengthen Canada's links to global markets, diversify trade, and establish more efficient and reliable internal trade corridors, including in Canada's northern and Arctic regions.

[John Knubley](#), deputy minister of ISED from 2012 to 2019 and lead architect of the five Superclusters structuring initiative, argues in a study published¹⁴ in April 2021 that Superclusters are **best judged within a broad innovation policy framework and with a long-term perspective**.

Evaluating their performance is no easy task, and it is relatively early in the life of these five-year initiatives to make definitive judgments. Formal evaluations are still to come. Building ecosystems and investing in related projects is a long-term game, even beyond the planned five-year period.

This view is echoed by the internal assessment published in 2022 by ISDE¹⁵. The scope of the latter includes each of the five Superclusters during the period from 1st April 2017 to 31 March 2021. It examines immediate outcomes and early progress towards intermediate outcomes.

Each Supercluster is characterized by a specific geographical focus: **Scale AI is targeting its actions on the strategic Quebec-Ontario supply chain corridor**. There is no doubt that proximity and density are important for a strong ecosystem. Each of the Superclusters has been challenged to expand nationally beyond its region. Questions remain about the right balance of activities in this regard.

ISED's [evaluation of the Innovation Supercluster Initiative \(ISI\)](#) highlights some key facts relevant to the ongoing development of the national supply chain strategy:

- The players in the innovation ecosystem have mobilized strongly, as shown by the growing number of members joining the five Superclusters each year. The total number of organizations that have become members of Superclusters has risen from around 1,300 in 2018-2019 to more than 7,000 in September 2021, which is around 5.4 times the number recorded at the launch of Superclusters.
- Project stakeholders felt that there could be more flexibility in the allocation of project funds and that project duration could be modified to better accommodate projects with fixed deadlines, supply chain challenges and delays.

¹⁴ To find out more, visit CANADA April 13, 2021, Brookfield Institute for Innovation + Entrepreneurship.

¹⁵ Source : [Evaluation of the Innovation Superclusters Initiative](#) - Innovation, Science and Economic Development Canada (ISDE) - Audit and Evaluation Branch Report, March 2022

- ISI has fostered collaborations between the private, public, academic, and not-for-profit sectors, primarily by funding projects that aim to accelerate the development and adoption of cutting-edge technologies, address ecosystem gaps and challenges, and respond to the COVID-19 pandemic.
- The evaluation report also shows that some entities are at a more advanced stage than their counterparts and are selecting and implementing projects more effectively than others. One of the two Superclusters that used the lowest proportion of funds to cover administration and operating costs, **Scale AI, also used only 22.1% of available funds to finance projects.**
- Stakeholders noted that more could be done to help provincial governments participate in some of the projects, as well as to strengthen the alignment between different federal departments and leverage Assistant Deputy Minister (ADM) committee meetings to create a more consistent source of innovation information.

Collaborative initiatives such as **ISI** within regional ecosystems do not yet appear to have had the desired impact in Canada, including on supply chain performance. These findings highlight two fundamental issues: the first is deficient governance and execution capacity; this is exacerbated by the second: the lack and underutilization of data, issues that will be considered in the third part of this Burgundy Report.

2. AT FEDERAL-PROVINCIAL LEVEL: THE ELUSIVE OBJECTIVE OF A SINGLE INTERNAL MARKET

Internal trade is an essential component of economic growth in Canada, particularly for small and medium-sized enterprises. As early as **1985**, the [Macdonald Commission](#) identified this as a major issue for the Canadian economy and proposed "minimizing barriers to the free movement of labour, means of production and services", as well as harmonizing the integration of public policies to create a true Canadian economic union.

A 2019 IMF working paper¹⁶ estimates that **full liberalization of our domestic goods market can increase GDP per capita by around 4%**. Its conclusion, drawn four years earlier, is even more convincing given the current situation:

*"Because of the importance of these issues, federal, provincial and territorial governments should make the reduction of internal trade barriers their shared priority. Barriers to internal trade are a long-standing problem and **nothing less than a sustained and concerted collective effort will be required to eliminate the barriers that prevent Canadian businesses from competing on a level playing field and growing.** Easier access to the entire Canadian market could also attract more investment to Canada. **A 'coalition of the willing' could be a way to accelerate progress**".*

For its part, **the OECD**, in its most recent [Economic Survey of Canada](#) dated June 2023

¹⁶ IMF ([Internal Trade in Canada](#)): [Case for Liberalization Working Paper](#) No. 2019/158 by Jorge Alvarez ; Ivo Krznar ; Trevor Tombe - July 22, 2019

- **Underlines the critical importance of this issue:**
 - *"In Canada, growth in productivity and investment has fallen behind that of the United States and other major OECD economies. **Lowering barriers to internal trade and improving competition policy would all contribute to better performance.***
- **Strongly recommends boosting productivity growth by :**
 - *Accelerating the reduction of internal barriers to trade, in particular by extending the scope of the Canadian Free Trade Agreement and strengthening its provisions.*
 - *Reviewing restrictions on foreign ownership of network industries with a view to removing them.*
 - *Strengthening the instruments of competition law and regulation that prevent the emergence of anti-competitive behaviour around large digital companies (ex-ante regulation)".*

In the current context of international instability, one of the urgent goals of the supply chain in Canada is under the direct control of the federal-provincial authorities: the achievement of a single internal market.

Significant progress has been made in recent years in liberalizing internal trade in Canada. Provincial and territorial premiers agreed in July 2019 to strengthen the economy by reducing barriers to internal trade.

They agreed to continue to work together to ensure the success of the Canadian Free Trade Agreement (CFTA)¹⁷ and to continue to reduce trade irritants by prioritizing:

- Identifying and removing remaining barriers to labour mobility.
- Aligning regulatory approaches in certain priority areas.
- Greater liberalization of trade in alcoholic beverages.
- A review of the parties' own exceptions under the CFTA.
- Cooperation to further align regulation in certain emerging areas.

In January 2020, the federal, provincial, and territorial governments committed to reviewing their own exceptions under the CFTA. This agreement has been amended to allow the parties to withdraw or restrict the scope of their own exceptions more quickly and efficiently.

In February 2020, the Council of Ministers Responsible for Transportation and Highway Safety (**COMT**) launched the Pan-Canadian Competitive Trade Corridors Initiative (**PCTCCI**). This initiative aims to improve Canada's position as a reliable trading partner by creating a framework for more coordinated improvements to Canada's transportation networks in support of trade.

In February 2021, the Council of Ministers approved the publication of the [Phase 1 Interim Report](#). This report examined Canada's transportation networks that support trade as interdependent systems and described the physical barriers and non-infrastructure irritants to trade.

¹⁷ [The Canadian Free Trade Agreement](#) is an intergovernmental trade agreement signed by Canadian ministers that came into force on 1st July 2017.

"No matter how many trade agreements governments sign, economic growth in Canada will remain insufficient to maintain the standard of living of Canadians if nothing is done to increase the competitiveness of their economy"

(Robert Gagné, 2022).

In February 2022, the Council of Ministers approved the publication of the [report on phase 2 of the Pan-Canadian Competitive Trade Corridors Initiative](#). This document identifies the specific issues and challenges that **could be the subject of collective action by** the various governments. The report also explores the context for action and the challenges facing supply chains in Canada and recommends a way forward to address these challenges. This report is the subject of the cross-analysis that follows. (See Part Two)

- This latest document includes a vision, objectives and 27 actions on which governments **can, over time**, work together to help meet these challenges and improve Canada's trade-friendly transport systems.
- The proposed actions are organized according to **four key areas of interest** which were identified during the first phase of this work:
 1. Strengthen coordinated transport planning to manage future demand.
 2. Promote regulatory alignment.
 3. Encourage innovation and the adoption of technologies.
 4. Enable efficient data sharing.

On January 31, 2022, the Federal Government, under the chairmanship of the Minister of Transport, held a "National Summit" in Ottawa to strengthen Canada's supply chains. This summit was followed by a series of regional and industry sessions, and **the National Supply Chain Task Force** was created to make recommendations on short- and long-term measures for Canada's supply chain.

3. FROM EUROPE'S SINGLE MARKET TO CANADA'S SINGLE DOMESTIC MARKET: THE TIME HAS COME TO ACT BOLDLY

In 2023, the European Union celebrates the [thirtieth anniversary](#) of the creation of the single market on 1st January 1993. This decision by the Member States has led to unprecedented market integration between the economies of the Member States, driving growth and competitiveness and underpinning Europe's economic and political strength at global level.

More recently, the single market has been essential in helping Europe deal with the COVID-19 pandemic and the energy crisis resulting from Russia's invasion of Ukraine. Preserving and strengthening the integrity of the single market will remain essential to enable Europe to respond to new challenges in a coordinated way and to continue to support the competitiveness of European economies.

This reference to the experience of the European single market is repeated by Professor Robert Gagné in an interview given in November 2022 on the occasion of the publication of an analysis by the [Centre for Productivity and Prosperity - Walter J. Somers Foundation](#) (CPP) in Canada's lagging productivity¹⁸.

¹⁸ [Canada's productivity lag: What if the answer lay in competition?](#)

[The report Canada's Lagging Productivity: Could the Problem Be Insufficient Competition?](#) Points out that the free movement of labour, means of production and services is higher in the European Union (between sovereign countries) than in Canada (between federated provinces). The EU also has a strong culture of protecting the best interests of consumers.

These observations lead the authors to recommend that the governments of the Canadian provinces draw inspiration from the public policies of the European Union and tackle, once and for all, the regulatory barriers that still limit interprovincial trade and prevent the development of a strong domestic market.

In order to reverse the trend and halt Canada's decline, the CPP researchers recommend in the referenced study that the gap between the country's economic development strategy and public policy on competition be addressed.

THE URGENT CALL FOR ACTION, COLLABORATION AND TRANSFORMATION

This title is based on the report of the National Supply Chain Task Force and presents a cross-analysis of the 93 recommendations from three major and complementary public policy reports at federal-provincial level, all published in 2022.

1. THE REPORT OF THE NATIONAL SUPPLY CHAIN TASK FORCE

[The “ACT” report](#) is the result of an extensive consultation process. Five key points emerged:

1. A recent and convincing diagnosis of the current state of the Canadian supply chain in the face of the disruptions confronting world trade and the planet.
2. A coherent set of **thirteen immediate concrete measures** (grouped into two categories: operational and governance) as well as **eight long-term strategic recommendations** based on **five** clearly stated **guiding principles**.
3. An ambitious monitoring framework and timetable divided between the short term (next two years) for urgent measures and the medium term for strategic recommendations.
4. A holistic view of all elements of the supply chain and its transformation through collaborative and individual action of all stakeholders in achieving the fundamental objective of organizing a more flexible, agile, resilient, competitive, and efficient supply chain.
5. Recognition by all stakeholders of the fundamental importance of digitization and the need to increase the visibility of data and their interactions throughout the supply chain.

The overarching theme of this report is the systemic difficulty for governments and industry in Canada to act jointly and decisively on the major issues that are highlighted and that exacerbate long-standing weaknesses in our supply chain:

"It is imperative that the Government of Canada and stakeholders in the transport sector join forces to resolve the current crisis..."

- **Action. Collaboration. Transformation.** *These three words embody both the spirit of the recommendations contained in this report and our call to action to government, transport supply chain stakeholders and all Canadians to address the supply chain crisis...*
- *Government, transport and logistics providers, shippers, producers, manufacturers, and retailers must act decisively, together, and urgently to create a supply chain that is more flexible, agile, resilient, competitive, and efficient than it is today.*

Developing such a system will require a national approach, with collaboration playing a central role"
(page 2)

In two of its five guiding principles, the report of the ACT Working Group rightly emphasizes:

- **"Our work is based on the national public interest:** a supply chain operated for the common good of the country to ensure the general welfare, safety, security and well-being of Canadians, including maximizing our commercial opportunities.

- **Contribute to Canada's long-term competitiveness and prosperity.** Issues of economic competitiveness and security are increasingly inseparable: tackling Canada's supply chain issues requires a new conceptual framework adapted to the current geopolitical context, the accelerating climate crisis, and the digital transformation. The dynamics of global trade and the supply chain reflect much of the spectrum of this aggressive competition and major turbulence.
- **The current situation makes it more important than ever to prioritize the issues that are holding back the development of a strong and resilient internal market, in particular by tackling the regulatory issues that are hampering interprovincial trade, but also by ensuring more rigorous control of the management of competition in the territory.**

While welcoming the report, [the Minister of Transport](#) indicated on 6 October 2022 that " *Moving forward, the Government of Canada will develop a National Supply Chain Strategy. This strategy will be informed by the recommendations included in the Task Force's final report*".

The "ACT" Task Force Report presents a preliminary framework for **a new national supply chain strategy**, a blueprint of what is needed to ensure that Canada has the vision, goals, plans and resources for an era of increased strategic competition. This will need to be underpinned by an overarching national data strategy and a supply chain resilience strategy. To be **national, it will need to involve provincial governments and port cities.**

This critical national strategy is of direct interest to all Quebec stakeholders in the St. Lawrence-Great Lakes (SLGL) trade corridor, the central link in the Canadian and North American supply chain.

2. CROSS-SECTIONAL ANALYSIS OF THE THREE 2022 REPORTS ON SUPPLY CHAIN CHALLENGES IN CANADA

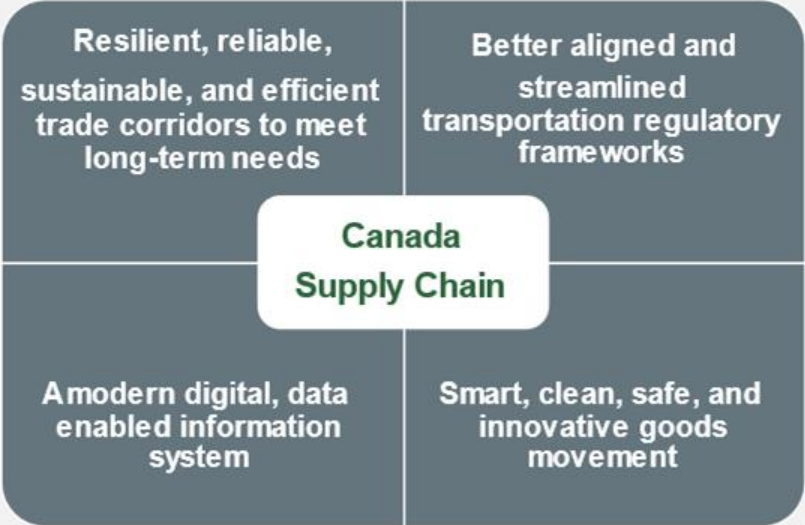
The geostrategic position of Quebec and Ontario give them a major advantage and a critical, joint role and responsibility in resolving the structural challenges of the supply chain in Canada, as well as in implementing the recommendations of three complementary public policy reports:

- The report on phase 2 of the "[Pan-Canadian Competitive Trade Corridors Initiative](#)" **published in February 2022** by the Council of Ministers Responsible for Transportation and Highway Safety (COMT).
- Action .Collaboration. Transformation ."[Final Report of the National Supply Chain Task Force October 2022](#)
- "[Improving efficiency and resiliency in Canada's supply chains](#)" Report of the Standing Committee on Transport, Infrastructure and Communities November 2022

The three reports, published within months of each other, are complementary and reflect a broad consensus among public and private stakeholders on what needs to be done to address the major challenges facing Canada's supply chain. The cross-analysis upon which this Burgundy Report is based identifies a **total of 93** more or less detailed and interconnected **recommendations.**

These recommendations address all the players in our supply chain in different ways, but with the same urgency.

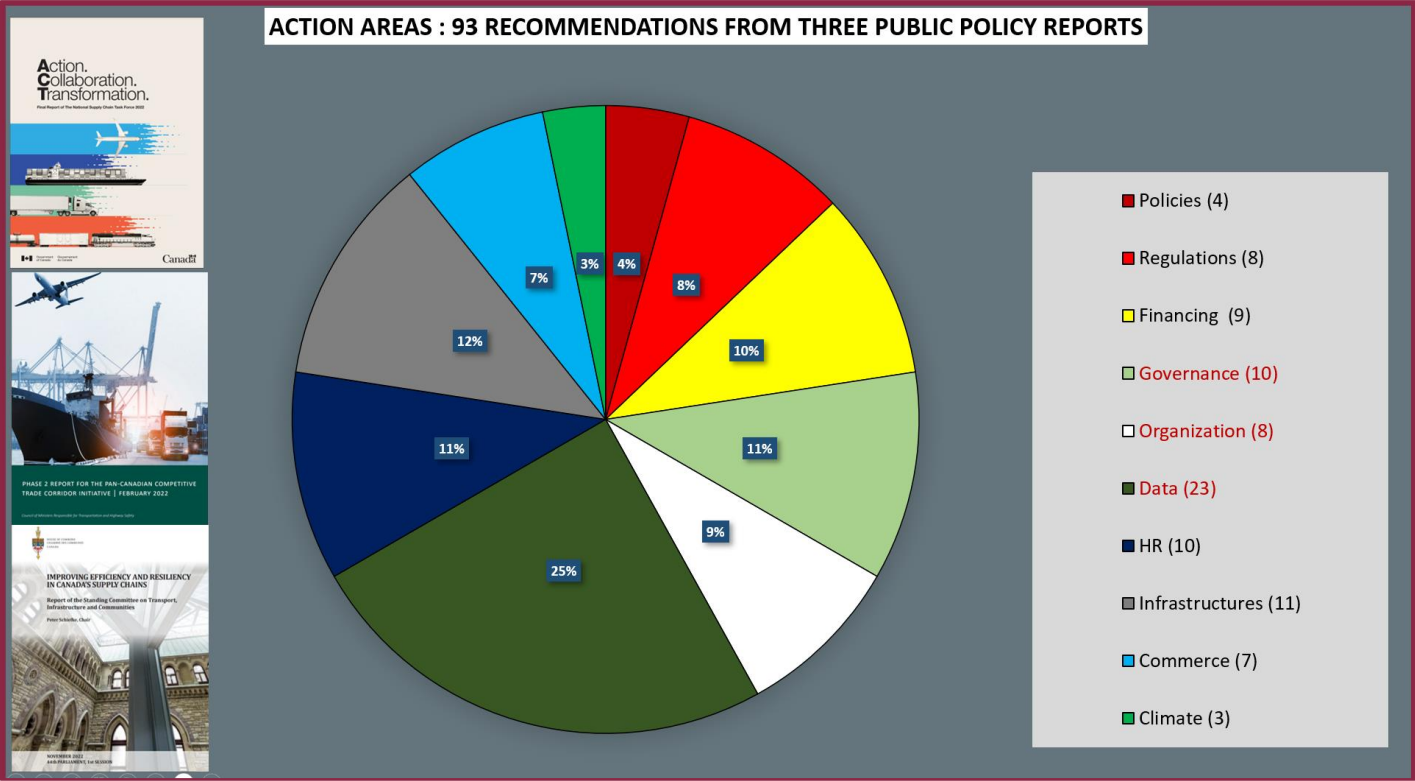
The following table summarizes and incorporates **the vision statement** put forward by the Council of Ministers responsible for Transport and Road Safety in its February 2022 report (COMT), as well as the **five guiding principles** adopted by the ACT national supply chain task force:

« COMT » Vision statement	« ACT » Guiding principles
 <p>The diagram features a central white box labeled "Canada Supply Chain". This box is surrounded by four dark blue rounded rectangular boxes, each containing a specific goal or focus area:</p> <ul style="list-style-type: none"> Top-left: Resilient, reliable, sustainable, and efficient trade corridors to meet long-term needs Top-right: Better aligned and streamlined transportation regulatory frameworks Bottom-left: A modern digital, data enabled information system Bottom-right: Smart, clean, safe, and innovative goods movement 	<ol style="list-style-type: none"> 1. Mandate: <ol style="list-style-type: none"> a) To drive and support short term results; b) To contribute to sustainable improvements in the transport supply chain. 2. Work based on the national public interest 3. Contribution to Canada's long term competitiveness and prosperity 4. Canada's success is a collective effort 5. Assessing the impact of climate change

The "ACT" report rightly points out that "Canada is only one player in a complex and interconnected global network of supply chains... This means that Canada alone is unable to influence or change many factors and issues" (page 13).

It is equally true that the Government of Canada alone will not be able to manage the national security challenge posed by the current state of the supply chain. It is up to the public administrations in different jurisdictions to consolidate these recommendations into decision documents that must be submitted to the federal, provincial, and municipal authorities in order to respond within a concerted public action to the urgent call made to them.

As illustrated in the figure below, the areas of action with the highest number of recommendations in the three reports relate to: public policy and regulation; governance and organization; multi-partner public/private collaboration; accessibility and sharing of reliable data; human resources; financing and multimodal transport infrastructure; climate change; and domestic and international trade:



The three benchmark reports make a series of **eighteen (18) recommendations relevant to governance and organization**. They are summarized in the table below - the **6 recommendations in italics** will be analyzed in part IV of this report (**page 52**):

COMT	ACT Working Group	Parliamentary Committee Ottawa
<p>Governance and multi-partner collaboration :</p> <ol style="list-style-type: none"> 1. Support FPT government freight planning 2. Sharing best practices in spatial planning <p>Sharing best practice in spatial planning</p> <ol style="list-style-type: none"> 3. Establishing and maintaining dialogue with stakeholders 4. Introduce better information sharing between government authorities and with industry 5. Clearly communicate the government's long-term objectives 6. Identify potential use cases and pilot projects <p>Structure and organization:</p> <p><i>1. Consider setting up a pan-Canadian stakeholder consultation table</i></p>	<p>Governance and multi-partner collaboration :</p> <ol style="list-style-type: none"> 7. Speed up the approval process for winter transport on ice roads 8. Engaging indigenous groups: key supply chain challenges <p>Structure and organization :</p> <p><i>2. Create a Supply Chain Office for all federal departments.</i></p> <ol style="list-style-type: none"> 3 Establish, finance, and hire staff for a supply chain office. 4 Expand the CFIA and other services required to process commercial goods. <p><i>5 Review the mandate of the Canadian Transportation Agency: independence, authority and funding needed to fulfil the mandate</i></p>	<p>Governance and multi-partner collaboration :</p> <ol style="list-style-type: none"> 9. Increased dialogue and cooperation with stakeholders in developing the national trade corridor strategy <p><i>10. new legislative/regulatory framework for greater data sharing and transparency</i></p> <p>Structure and organization :</p> <p><i>6. Supply Chain Commissioner (Ministry of Transport)</i></p> <p><i>7. Establish a permanent Advisory Group representative of the main players in the supply chain</i></p> <ol style="list-style-type: none"> 8. Improving the capacity of the Border Services Agency to deal with delays during peak full stops

The three public policy reports published in 2022 and cross-analyzed in this Burgundy report made a total of **twenty-three (23) recommendations on data**: this area of action accounts for a quarter of all recommended measures:

No	COMT (FED. - PROV.)	National ACT Working Group	Parliamentary Committee (Federal)
1	Improving intergovernmental data collection and sharing	15. Digitizing and creating end-to-end supply chain visibility	17. New legislative/regulatory framework for greater data sharing and transparency
2	Enhance the use of evidence in regulatory development	16. Reopen EXPRESS card enrolment centres and/or consider new ways of speeding up applications.	18. Increased cyber security of the supply chain and transport infrastructures
3	Improving the use of digital platforms		19. Increased automation financing for businesses
4	Establish one-stop-shop systems for multi-governmental requirements		20. Intelligent ports: promoting digital capacity
5	Continuing FPT collaboration on emerging technologies		21. Collaborative adoption of emerging technologies to improve port efficiency
6	Prioritizing R&D investment in high-potential technologies		22. Optimizing ports for greater efficiency and safety: data sharing
7	Develop a robust data governance framework		23. Supply chain visibility
8	Expand the central repository of public transport data and information used by government authorities, where applicable		
9	Undertake the creation of a new pan-Canadian collaboration portal for transport		
10	Identifying vital data gaps		
11	Identify common data requirements and the model for sharing acquisition costs		
12	Developing an overview of transport systems through information sharing		
13	Transforming data into useful information		
14	Share analysis data securely		

Implementing an intelligent supply chain is not a panacea, but it can be the trigger for a sustainable transformation in the way we organize and collaborate, for the benefit of our security, our economy, our environment, and our social cohesion.

Only the effective mobilization of all stakeholders will make it possible to "act, collaborate and transform," as called by the "ACT" report and as required by the vulnerable situation of the supply chain in Canada. The seriousness of this situation is forcing us not only to adapt, but also to [transform the way our institutions operate](#) and to adopt a new approach to the way we think about and manage public and private organizations, as well as the way we work together.

This mobilization and the adoption of an agile organizational mode are a fundamental prerequisite for effective collaboration to resolve the complex issues facing Canada, such as those in the supply chain. In a digital world, solving these systemic problems is no longer an option.

The "ACT" national Task Force report is the most recent and urgent call in this direction. Two of the Task Force's strategic recommendations, which are worded differently from the other two reports, are the focus of this analysis because of their cross-cutting nature and their fundamental impact on resolving critical supply chain issues in Canada:

Weak governance and delivery capacity	Lack and under-use of data
<p>Recommendation: Create a Supply Chain Office within the Department of Transport to unify the federal government's responsibility and authority for supply chain management across all departments.</p>	<p>Recommendation: digitize and create end-to-end supply chain visibility for efficiency, accountability, planning, investment, and security.</p>
<p>Rationale (excerpts from the ACT report): The fragmentation of responsibility for the national supply chain across many government departments is undermining its management. There is an urgent need to take a holistic view across departments and jurisdictions to establish clear accountability and impose measures that support a highly functional, reliable, resilient, and adaptable supply chain.</p>	<p>Rationale (excerpts): Canada is lagging behind in using technology to improve and modernize its transportation and supply chain processes. A focus on digitization is urgently needed to compete internationally and become a global leader. A national supply chain data strategy and a government-led, industry-wide commitment to data exchange are needed to improve visibility, competitiveness, resilience, and agility.</p>

The strategic recommendation to create a supply chain office to unify federal authority and the recommendation to digitize and create visibility of this essential infrastructure goes well beyond the mandate of the Transport Canada portfolio for their effective implementation. These recommendations call upon the entire government apparatus in Ottawa as well as the active collaboration of the provincial authorities. They are transformative.

CROSS-FUNCTIONAL IMPLEMENTATION ISSUES: GOVERNANCE, CAPACITY TO MOBILIZE AND EXECUTE

Cross-analysis of the three benchmark reports and the current context highlight the two systemic issues facing public authorities, both of which are directly linked to the effective co-management of supply chain issues in Canada.

These are the issues of governance and execution capacity, and the issue of the lack and under-exploitation of data in Canada.

1. THE CHALLENGE OF GOVERNANCE AND EXECUTION CAPACITY: THE CIVIL SERVICE FACED WITH THE " PERMACRISE" CRISIS¹⁹

- Taken in context, the findings of the “ACT” report and its horizontal recommendations on data governance and accessibility raise fundamental issues that are at the heart of a serious crisis of leadership, organizational culture and execution capacity within the Canadian government apparatus (both federal and provincial).
- This ability to execute has been sorely tested by years of delay and eroded by recent crises against a backdrop of impending climate catastrophe. The dominant organizational culture is characterized by a paralyzing aversion to risk, a lack of customers/citizens focus and compartmentalized hierarchical modes of operation.

However, this is not a new phenomenon, even if it is exacerbated in the current context. [A deputy minister's task force on horizontal issues](#), set up in 1995 by the Clerk of the Privy Council Jocelyne Bourgon, identified three major challenges for the public service in managing horizontal issues; the supply chain is only the most recent example:

- 1 The process: Rethinking fundamental concepts.
- 2 Systems: Strengthen the interdepartmental policy-making system.
- 3 Culture: working together towards common goals.

Overall, the public sector at all three levels of government represents around 40% of Canada's GDP and around 20% of its workforce. In an ever-changing, increasingly complex, and fragmented operating environment, it is becoming more and more difficult to manage and deliver expected results. Historically, public sector organizations have faced constant pressure to deliver value within tight resource constraints. During the recent period of turbulence, these organizations have been put to the test as never before.

¹⁹ To find out more, consult the source: [Responsive government survey. A global analysis of civil service responsiveness and agility](#), Global Government Forum in partnership with PA Consulting 2023, page 22 ... Governing through a permacrisis

In the fight against the pandemic, as with any major issue, governments in Canada had to adapt quickly to an extraordinary situation.

This crisis has highlighted shortcomings in the way governments operate, both within and between them. Responsibility for service delivery was sometimes confusing. The speed with which good practice from one government department or sector was adopted by others was not always fast enough, as was the case in the transport sector.

The ability of the machinery of government in Ottawa to deliver seems to have reached a breaking point, as evidenced by the operational failures that are making headlines and are the subject of sustained criticism from all quarters²⁰. To begin to appreciate the scale of the problem, we need only mention that 75% of executives in the Public Service of Canada report burnout²¹, and that the government has a shortfall of around 7,000 employees to meet its technological needs²². Faced with this situation, it is quite understandable to sound the alarm, as the national "ACT" task force has done, given the persistence of this systemic issue of collaboration within the federal public service and in the intergovernmental machinery in Canada.

Improving the way the federal public service operates and the way it works with the provincial authorities requires leadership from ministers and senior civil servants, a willingness to challenge themselves openly, to cooperate intensively and to be open-minded about what needs to change; the scale of the turnaround involved is considerable.

It is against this critical backdrop that the follow-up to address Canada's supply chain challenges and the recommendations made by the three 2022 reports are set.

2. THE ISSUE OF THE LACK AND UNDERUTILIZATION OF DATA IN CANADA

The three 2022 reports on the state of the supply chain underlines the critical nature of this issue, which extends beyond the transport portfolio, and put forward a set of 23 complementary recommendations²³ that call on the various levels of government in Canada, particularly the federal government.

"The way the Government of Canada collects, manages, governs, accesses and shares data with other governments, sectors and Canadians must change. The government has a responsibility to ensure that its workforce has the skills and tools it needs to use data ethically in support of the public good, while ensuring the protection of Canadians' sensitive and personal data." (see diagnosis illustrated in the graphic that follows)²⁴

²⁰ See References

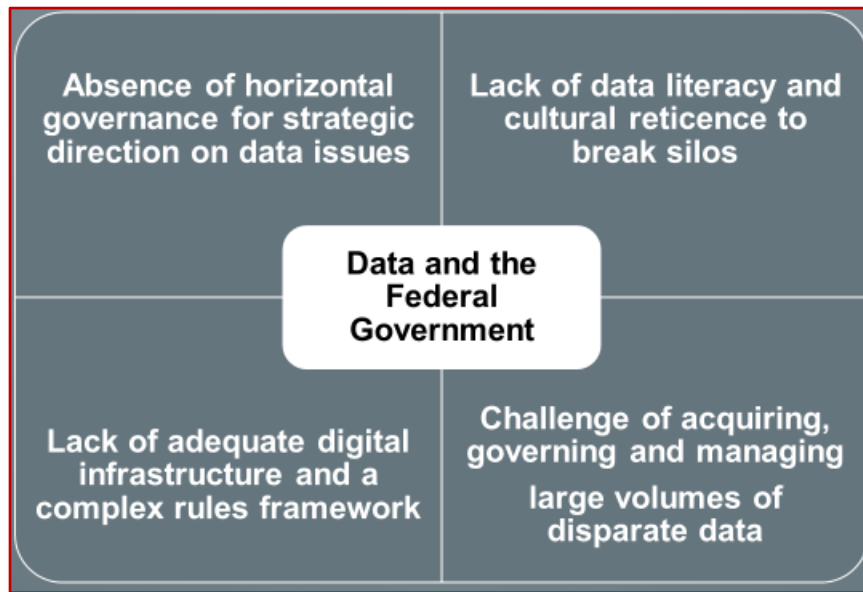
²¹ APEX Survey on the Work and Health of Executives (2021) in the [29th Annual Report to the Prime Minister on the Public Service of Canada](#) for the year ending March 31, 2022

²² [Ottawa lacks IT workers to run its programmes](#)

²³ See above page 28.

²⁴ Report to the Clerk of the Privy Council : [Data Strategy Roadmap for the Federal Public Service](#), Ottawa 2018

The public policy response does not depend on a single department or a single level of government; it lies in the pooling of efforts within each level and between each of the governments in Canada.



The diagnosis made by the National Supply Chain Task Force and corroborated by the two other reference reports highlights the extent to which Canada is lagging behind and the urgent need to "act, collaborate and transform". This situation is worrying, to say the least, five years after the publication of the federal government's roadmap and the implementation of the [Strategic Digital Operations Plan from 2018 to 2022](#).

Canada's recent [Digital Government Strategy](#) (March 2022) recognizes that not all services are currently easy to access and use, despite ongoing work to review and improve service standards for government services. Government has huge data assets, but often fails to make the best use of them.²⁵

2.1 Promising approaches: Canada's Open Government and Digital Agenda.

- The need to transform the culture within the federal public service has been recognized. Two interesting initiatives, the launch of the [Open Government programme](#) and the [Data Strategy Roadmap for the Federal Public Service](#), are of particular note. They were taken under the leadership of **Michael Wernick**, Clerk of the Privy Council and Secretary to the Cabinet from 2016 to 2019.
- **The cornerstone of excellence in service delivery is the trust that Canadians place in our institutions.**
- These two cross-cutting government initiatives are structuring in nature and involve all federal departments and agencies.
- **They determine the framework of policies and standards through which critical supply chain governance and data issues must be managed at federal level.**
- The central theme common to both strategies is to improve the accessibility and quality of services for Canadians, while ensuring the security and protection of personal information.
- Two central agencies, the Treasury Board Secretariat (TBS) and the Privy Council Office (PCO), share responsibility for the whole of government.

²⁵To find out more, consult the [Canada's Open Government National Action Plan 2022-2024](#)

2.2 A new impetus for the transformative open government programme

An OECD factual analysis²⁶, published in February 2023, on "open government" in Canada was carried out at the request of the federal government's Treasury Board Secretariat (TBS). The TBS requested the OECD's opinion on the subject following an **evaluation of the** relevance and effectiveness of the open government programme prepared by TBS's Office of Internal Audit and Evaluation in 2021 and covering the financial years 2016-2017 to 2018-19.

Among other conclusions, this important analysis highlights the need for a strong vision of open government within the Government of Canada. As a key action to implement the recommendations made in the assessment, the Treasury Board Secretariat has decided to develop a **Federal Open Government Strategy** as the primary guidance document on open government for the federal government.

The OECD analysis shows that adopting a holistic federal open government strategy can indeed help Canada establish a vision, objectives, and roadmap for its open-government agenda over the medium and long term.

This strategy must prioritize the participation of citizens and stakeholders, while establishing a more direct link between open government reforms and improving citizens' confidence in public institutions and strengthening democracy.

Open government" is based on the principle that the public should be able to see, understand, contribute to, monitor, and evaluate public decisions and actions. It is defined by the OECD as "a culture of governance that promotes the principles of transparency, integrity, accountability and stakeholder participation in support of democracy and inclusive growth". Open government represents a paradigm shift for governments, public administrations, civil servants, citizens, and public policy actors in general.

Digital government and open government both aim to improve the relationship between governments and citizens. **However, open government does not see the implementation of digital technologies as an objective, but rather as a means to achieve the broader goal of more transparent, accountable, and participatory government.**

This logic of organizational upgrading should apply to the forthcoming interdepartmental Supply Chain Office programme because of its multi-sectoral and cross-cutting nature, except that the Department for Transport has neither the status nor the influence of central agencies such as the Privy Council Office (PCO) or the Treasury Board Secretariat (TBS).

The mobilization required to bring the national intelligent supply chain project to a successful conclusion will not be possible without the commitment of the highest levels of government in the pursuit of the cross-cutting and transformational agenda represented by these three inseparable strategic priorities of open government, digital ambition, and the intelligent supply chain in Canada.

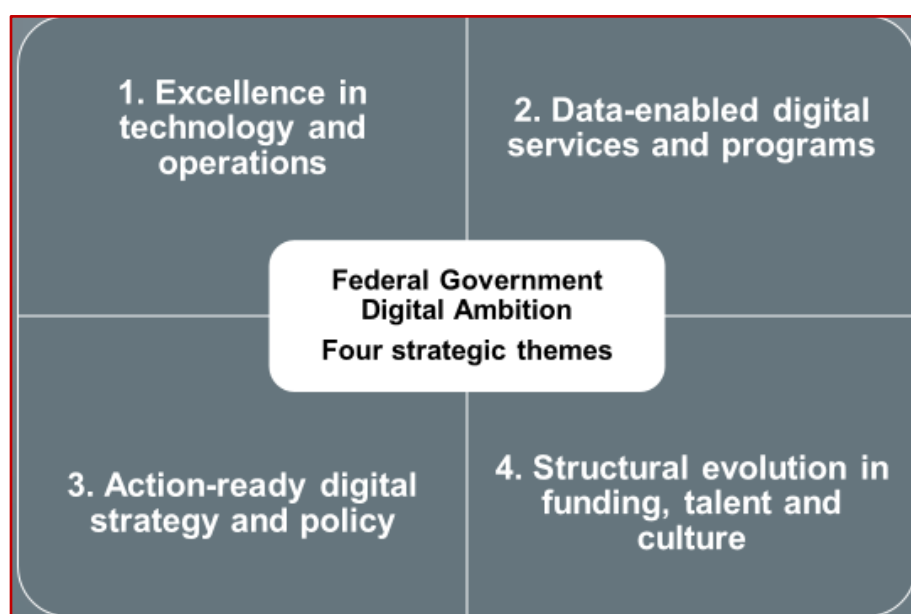
²⁶ For more information, see [the original OECD document](#) *Open Government Scan of Canada*

Designing and Implementing an Open Government Strategy or an [informal French translation](#) published by the SCT.

2.3 Canada's transformative digital agenda

The new Digital Blueprint "[Canada's Digital Ambition](#)", published in August 2022 by the Secretary to the Treasury Board, builds on the vision set out in "*Canada's Digital Government Strategy and Digital Operations Strategic Plan*". "The Digital Ambition is intended to provide a clear, long-term vision for advancing digital service delivery, cyber security, talent recruitment and privacy.

The operational priorities of this new plan are relevant to all the recommendations made by the three 2022 benchmark reports on the lack and under-use of data. The strategy that articulates the "digital ambition" is based on **four thematic pillars**, sustainable objectives to be achieved in order to make digital government a reality, and **twelve measurable operational priorities** for the next three years. We list them hereinafter.



Its vision can be summed up as follows: The Government of Canada collects, shares, protects, and uses data for the benefit of Canadians. Data is fully integrated into the way results are delivered to Canadians and valued like any other critical asset. This vision is particularly relevant to solving Canada's supply chain challenges.

The foundations of this renewed strategy are based on :

- The availability of the talent and capacity needed to harness data to inform government decision-making.
- Effective governance to ensure that data is managed horizontally and holistically as a strategic asset.
- Processes and a digital infrastructure that enable secure, government-wide integration and use of data for the benefit of Canadians.

The expected **results** are :

- Effective, ethical, and inclusive services, programmes, and policies
- Trustworthy and responsible governance
- Greater public value for data
- Improved evidence-based decision-making.

CANADA'S DIGITAL AMBITIONS 2022

12 priorities for the next three years, presented by theme (2022-2025)

Strategic Theme 1: Excellence in technology and operations

- Priority 1.1: Strengthen the overall health of the government's applications portfolio
- Priority 1.2: Strengthen the implementation of the transformation of the Government of Canada
- Priority 1.3: Improve the service experience for all customers
- Priority 1.4: Deploy modern, accessible tools and equipment in the workplace
- Priority 1.5: Provide modern, reliable, and secure networks and infrastructure
- Priority 1.6: Plan and lead for sustainable and integrated management of services, information, data, IT, privacy, and cyber security

Strategic Theme 2: Data-driven digital services and programmes

- Priority 2.1: maximize the public value of data and information
- Priority 2.2: Create and use secure common solutions for the delivery of digital services
- Priority 2.3: Manage and use data and information as strategic assets

Strategic Theme 3: Digital policy and strategy ready for implementation

- Priority 3.1: Integrate digital government priorities into policy frameworks and policies

Strategic Theme 4: Structural change in financing, talent, and culture

- Priority 4.1: Support fully digital delivery by managing a culture change across government
- Priority 4.2: Create a digital-first workforce

The current renewal of the Data Strategy Roadmap for the Federal Civil Service, published in 2018, forms part of this master plan. The latest version of the [Data Strategy for the Federal Public Service strategy](#) is available since 19 April 2023²⁷.

These various data and open government strategies contain no direct reference to the supply chain and its many challenges. Nevertheless, these normative plans are directly relevant and provide a favourable interdepartmental operational framework for the pursuit of the supply chain as a national security priority.

3. DATA: THE NEW DNA OF THE SUPPLY CHAIN - A KEY AREA FOR ACTION.

In transport, as elsewhere, ubiquitous and connected digital technologies and networks are changing the way in which humans, machines and the human/machine association generate consequential decisions. Algorithmic governance poses new and different challenges that go beyond the scope of current public governance frameworks.

²⁷ The [2023-2026 Data Strategy for the Federal Public Service](#) 19 April 2023.

The International Transport Forum of the OECD (ITF/ITF) has 59 member countries and acts as a think tank on transport policy. The ITF is the only global body covering all modes of transport. It is administratively integrated into the OECD, but politically autonomous.

The report²⁸ published by this intergovernmental body describes how a new framework for public governance at the age of algorithms could take shape. This OECD study aims to improve policymakers' general knowledge of data science and to ensure that policies are adapted to an increasingly algorithmic world. Many of the findings relate to general governance practices and are not specific to transport due to the emerging nature of these challenges.

The National Supply Chain Task Force highlighted in its final "ACT" report the recognition by all stakeholders of the fundamental importance of digitization, the need to increase the visibility of data and interactions throughout the supply chain: this is an essential factor in the development and deployment of a coherent multi-stakeholder supply chain data strategy for Canada.

It is nothing less than establishing an operational principle in favour of openness and a requirement to share data between departments and different levels of government, so that policies are informed by the best analyses of data from all of them.

The economic benefits of improving data sharing within and between the public and private sectors are supported by numerous studies. One such study, contained in a recent OECD report²⁹, highlights the economic and societal benefits of promoting data access and sharing.

This report deserves the attention of Canada's decision-makers: globally, data access and sharing generate social and economic benefits worth between 0.1% and 1.5% of gross domestic product (GDP), in the case of public sector data, and between 1% and 2.5% of GDP when private sector data is also included.

The benefits of standardization include a reduction in the costs of technical adaptation for a greater number of companies and for public authorities, and a reduction in barriers to market entry or to the development of entirely new products or services.

These benefits should be particularly relevant to SMEs, which cannot normally influence the prioritization of standardization. SMEs would also benefit greatly from greater availability of public sector data, as they are generally unable to create large data pools themselves.

The federal and provincial governments have no choice but to place data at the heart of their internal decision-making processes and to share this data with each other.

²⁸ For more information, see ITF [Governing Transport in the Algorithmic Age OECD 2019](#)

²⁹ OECD : [Improving Data Access and Sharing: Balancing the Risks and Benefits of Data Reuse in Societies](#) OECD, 2019

This is all the more important given that accessibility to quality data is the biggest supply chain challenge for SMEs. SMEs seem to struggle with the availability, age, and quality of the data they use for their supply chain operations³⁰.

The OECD's work on data access and sharing has, however, revealed the need for more coherent data governance frameworks, as data access and sharing increasingly takes place across sectors and jurisdictions. Many of the benefits of data access and sharing are based on the fact that data created in one area and sector can provide additional information when applied in another area or sector.

The adoption of the [European Data Strategy](#) is a concrete illustration of this OECD analysis. This strategy should enable the European Union to become a leading player in a data-driven society.

Its implementation aims to **create a single market for data** by 2030, with free movement of data within the EU for the benefit of businesses, researchers, and public administrations, between the priority sectors selected.

A key pillar of Europe's strategy, the [Data Governance Act](#), due to come into force this year, will make more data available and establish rules on who can access what data, how it can be used and for what purposes, across all EU economic sectors. **This governance arrangement is expected to generate €270 billion in additional GDP for EU Member States by 2028 by tackling the legal, economic, and technical problems that cause data to be underused.**

Through the power of data, properly trained and equipped public servants will be able to effectively transform the way governments in Canada work, make decisions and deliver services as set out in all twenty-three of these recommendations for the supply chain in Canada.

4. INTERNATIONAL CHALLENGES AND OPPORTUNITIES

The shocks to global supply chains resulting from the pandemic, growing strategic competition with China and Russia's invasion of Ukraine have highlighted the **triple imperative of supply chain security, resilience, and agility in Canada** and with our key partners in North America, Europe, and Asia.

The war in Ukraine represents a major new challenge for the world economy. The latest simulations carried out by **WTO** economists³¹, which model the long-term scenario of a decoupling of the world economy into two rival blocs, show that the opportunity cost of a shift to geopolitical rivalry is estimated at 8.7% of global real income, with the most vulnerable economies facing opportunity costs of up to 11.3%.

World trade growth is expected to remain weak in 2023, despite a slight improvement in the GDP projections made last autumn, according to new forecasts by WTO economists released on 5 April³².

³⁰ For more information, see : Vecteurs Québec : [The biggest supply chain challenges for SMEs](#)

³¹ Source: WTO, 23 February 2023, [One year of war in Ukraine: The impact on world trade and development](#)

³² Source : [World Trade Outlook](#)WTO, 5 April 2023

and statistics

Restrained by the effects of the war in Ukraine, stubbornly high inflation, tighter monetary policy and uncertainty in the financial markets, the volume of world merchandise trade is expected to grow by 1.7% this year, after rising by 2.7% in 2022. This lower-than-expected increase is due to the fall recorded in the fourth quarter.

The major powers are vying to shape the emerging digital infrastructure that will determine the prosperity and security of states in the decades to come. China is spearheading a group of autocratic states determined to promote a techno-authoritarian vision of the digital age, while the transatlantic partners are only gradually converging on their vision of an open digital infrastructure. Canada is no exception to these trends and must be prepared to face up to this new geopolitical conflict.

Many experts claim that globalization is dead, and that world trade has reached its peak. New concepts such as the friendly relocation of supply chains, deglobalization and decoupling are tending to dominate this debate³³. We have to recognize the rise of three major regional poles in Asia, Europe, and North America. Current technological, demographic, and geopolitical trends are only deepening trade within each of these regions, none of which is self-sufficient.

By tracing the development of three major regional production chain centres in Asia, Europe and North America, Shannon K. O'Neil demonstrates in her latest book³⁴ how countries that trade with countries closer to them have gained a competitive advantage.

Regional production chains make products more competitive because they can draw on different skills, labour costs, raw materials, financing, and access to markets.

This regionalization has boosted economic competitiveness and prosperity in Europe and Asia. The same could be true for North America if the United States were to put into practice what Treasury Secretary **Janet L. Yellen** advocated on 13 April 2022 in a [speech given](#) before the IMF meeting.

In particular, it called for the friendly relocation of supply chains to a large number of trusted countries, in order to continue to expand market access in complete security, while reducing the risks for the US economy and its trusted trading partners, starting with Canada and Mexico.

The United States remains less integrated with its immediate neighbours than its Asian or European trading rivals, despite the development of a North American manufacturing platform under the 1993 North American Free Trade Agreement (NAFTA). This agreement was revised in 2020 in the form of the Canada-United States-Mexico Agreement (USMCA) at Donald Trump's insistence. More of the United States' trade is still with countries outside the North American market than within it.

"The United States is facing a major political challenge. Its physical and economic security depends directly on strong relations with its immediate neighbours Canada and Mexico. Yet North American issues - including borders and immigration, public health, energy security, the environment, and others - are generally viewed in isolation, through a domestic political prism. This disconnect is detrimental to the interests of all three North American partners³⁵. (Ian Bremmer).

³³ For more information, see the PIIE expert panel: [Globalization is dead-long live globalization!](#)

³⁴ [The Globalization Myth: Why Regions Matter](#) (Council on Foreign Relations Books), October 18, 2022, by Shannon K O'Neil

³⁵ Source: Ian Bremmer, President [Eurasia Group](#) in [Top risks 2023](#), January 10th, 2023

It is against this unstable backdrop that the observations in the report of the national "ACT" national task force deserves our full attention. On a number of occasions in its narrative, it stresses the risk of a loss of confidence in Canada internationally because of the current state of the supply chain, which is approaching breaking point:

"The major disruptions of the past two years have highlighted new and long-standing issues that must be addressed now, before our country's reputation as a reliable trading partner is further tarnished, as we have heard from various stakeholders and U.S. business partners" (p. 5).

"The lack of federal leadership is seen as a lack of prioritization of growth, health and oversight of our supply chain. Without a definitive path for the future growth of this complex economic system, there is concern that Canada's reputation as a reliable trading partner could be called into question, reducing economic opportunities." (p. 51)

"Friends, I know I've been criticized for saying this, but I'm not going to change my mind. We're going to make sure that America's supply chain starts in America."³⁶
President Biden.

These two quotes underline the critical international dimension of Canada's supply chain and its central link, the St. Lawrence-Great Lakes trade corridor at the heart of North America.

The evolution of the economic relationship with our most important market, the United States, under both Republican and Democratic administrations, is just as worrying, if not more so, than that expressed in the "ACT" report. The main difference between these two US administrations is that President Trump's administration has been marked by intemperate statements, whereas the Biden administration has passed legislation and issued executive orders to make the abandonment of trade liberalization a reality:

- The CHIPS microprocessor bill and the science bill, the bipartisan infrastructure bill, and the inflation reduction bill (IRA) are accompanied by massive investment, including in the transport sector.

- The package is the most ambitious US attempt at industrial policy in decades, accompanied by multiple executive orders focused on the resilience of the US supply chain and imposing unprecedented export controls on China.

This repeated commitment by President Biden in his State of the Union address and the strong bipartisan consensus on which it is based do not bode well for the pursuit of a robust agenda of North American collaboration and "friendly relocation".

However, at their most recent trilateral meeting in Mexico City, the three North American leaders [stated](#) their determination to *"strengthen security, prosperity, sustainability and inclusion in our region through commitments based on six pillars: 1) diversity, equity and inclusion; 2) climate change and the environment; 3) competitiveness; 4) migration and development; 5) health; and 6) regional security. To boost the region's competitiveness, the three countries will seek to forge stronger regional supply chains."*³⁶

³⁶ Source: [Declaration of North America 10 January 2023](#) Mexico City (Mexico)

These promises do not mask the inability of the three North American partners to resolve trade disputes, which threatens regional cooperation. Persistent problems over energy policy, motor vehicle content rules and agricultural trade barriers, which pose a dangerous threat to North American economic integration, do not appear to be close to resolution.³⁷

In this vein, Dan Ciuriak (Fellow CD Howe Institute) argued before a [parliamentary committee](#)³⁸ in Ottawa in March 2020 that the Canada-US-Mexico Agreement (USMCA) concluded during the Trump presidency, far from serving to strengthen the already solid economic ties between these three countries, was a step backwards in North American economic integration.

It leaves Canada exposed to risks regarding future access to our largest market and forces Canada to work in a restricted policy space to prepare for our future in a data-driven economy.

"Compared to the status quo established by the North American Free Trade Agreement (NAFTA), we estimate that the USMCA has a negative impact on the Canadian economy, permanently reducing its GDP by 0.4%. Against a baseline that includes the expiry of NAFTA and the implementation of US Section 232 tariffs, our figure is comparable to that published by Global Affairs Canada (GAC). For the United States, we obtain an estimate of -0.1 per cent, which is close to the official estimate of the US International Trade Commission (USITC) of -0.12 per cent". -Dan Ciuriak

According to Dan Ciuriak, the main reason for this negative impact lies in more restrictive rules of origin, which lead to a greater diversion of trade towards North American production inputs. This has the effect of making North America a less efficient production platform. The impact of this phenomenon in Canada and Mexico is greater than for the United States: Canada and Mexico have a larger share of production that must comply with these new rules in order to be sold in the United States.

For its part, a [substantial report by the Brookings Institute](#)³⁹ ("**Horizon 2023: Building More Integrated, Resilient and Secure Supply Chains in North America**"), released in a very timely fashion just days before President Biden's visit to Ottawa in March 23-24, 2023, discusses the importance of the North American Free Trade Agreement (NAFTA) for North America in pursuing the shared goal of building more integrated, secure and resilient supply chains, and examines the additional complementary investments and policies that are needed.

The report includes contributions from experts in the US, Canada, and Mexico, as well as shorter perspectives from senior officials and leaders in industry, civil society, and academia. The report's range of recommendations describes the investments and policies needed to maximize the opportunities presented to expand North American trade, which already supports more than 9.5 million jobs across the region (latest estimates from the Brookings USMCA Tracker).

³⁷ For more information: [North American leaders make little progress on the hard issues](#), Peterson Institute for International Economics (PIIE) Gary Clyde Hufbauer (PIIE) and Jeffrey J. Schott (PIIE)

³⁸ See video recording of the testimony on the [Senate website](#) - start 15^e minute.

³⁹ [USMCA 2023 forward Building more integrated, resilient, and secure supply chains in North America](#)

This study also addresses the complementary policies needed in the three countries - in conjunction with USMCA - that will help North America build the more integrated, resilient, and secure supply chains it needs.

The strategic St. Lawrence-Great Lakes economic corridor at the heart of North America and its natural extension to Europe cannot achieve its full growth potential without the creation of an intelligent supply chain and the creation of a single domestic market in Canada.

The report's focus on supply chains reflects the opportunity presented by the significant investments that the US, in particular, is making in the development of semiconductors, electric vehicles, critical materials and clean energy. By working together to improve the reliability and fluidity of our supply chains, Canada, the United States and Mexico must seize the opportunity to enhance the overall North American value proposition, with each partner having a role to play.

The Brookings Institute report also stresses that the relocation of supply chains is a national security imperative:

- Firstly, China is seen as a strategic competitor. China's willingness to restrict trade to pressure governments on a range of non-trade issues has highlighted how North America's trade dependence on China exposes each country to coercion. From this perspective, strengthening North American supply chains is a national security objective.
- Secondly, the COVID-19 pandemic has highlighted the fragility of global supply chains, which have become vulnerable to disruption due to companies' focus on efficiency, just-in-time manufacturing, and inventory reduction.
- Thirdly, job losses in manufacturing have led to a focus on revitalizing manufacturing and expanding North American supply chains as drivers of growth, efficiency, and competitiveness.

Tackling non-tariff measures (NTMs) is another complementary policy needed to support the expansion and deepening of North American supply chains. Duplication of testing and certification requirements prior to the use of goods in North American supply chains creates unnecessary costs and delays.

The flow of data across North America, and its regulation, is another area where the USMCA provides an important framework and where further work is needed in the context of strengthening North American supply chains. Indeed, Dan Ciuriak notes that USMCA is creating a stable policy framework that should make North America an increasingly attractive investment destination for digital technologies, many of which will be needed to realize manufacturing and supply chain growth.

This point highlights more broadly the multidimensional ways in which USMCA can reduce political risk and uncertainty and improve the investment environment in all countries. The convergence of growing internal and external tensions provides ample justification for the urgent call for action, collaboration and transformation issued by the ACT National Supply Chain Taskforce.

Implementing this essential structural reform will enable us to assume the role of a credible and effective partner of the United States and Europe in the necessary joint process of renewal, revitalization and 'rebuilding for the better' of the most powerful democratic community in modern history.

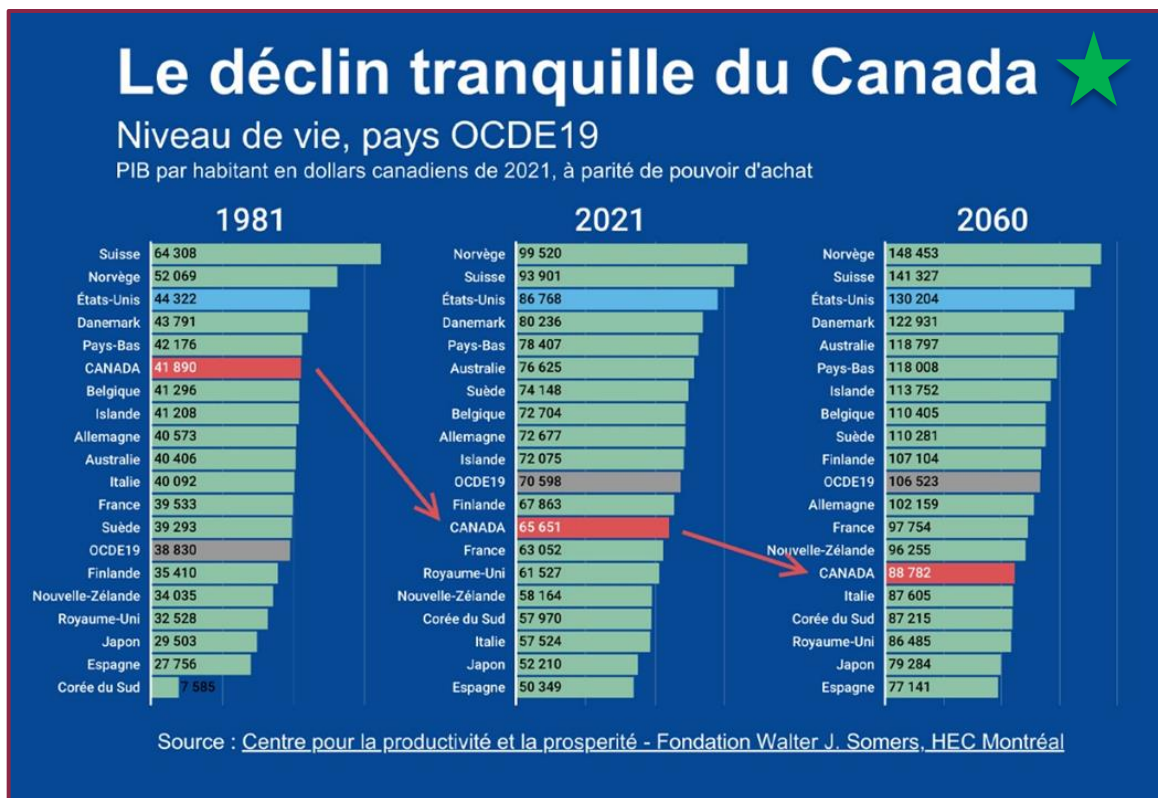
Two recent initiatives are part of this approach. The first, more specific, involves Canada. The second, which is broader, is part of bilateral transatlantic cooperation between the United States and the EU, but could eventually include Canada:

1. The [decision](#) by the Council of the EU on 20 February 2023 to confirm an invitation by the three projects coordinating countries, Germany, France and Cyprus, for Canada to participate in the **CSP project "Network of logistics platforms in Europe and support for operations"** in response to its request submitted in June 2022.

2. The aim of the **CSP "NetLogHubs" project** is to use a network of existing logistics facilities for the activities of a multinational network in order to prepare equipment for operations, share the use of depots space for spare parts or munitions, and harmonize transport and deployment activities. This network will reduce response times to identified supply needs and enhance the capabilities and sustainability of military operations. This CSP project is also closely associated with the CSP 'military mobility' project.

1. The White House and the European Commission have just signed [an administrative agreement](#) in which each pledges to accelerate progress in the field of artificial intelligence (AI) with the aim of improving agriculture, healthcare, climate forecasting and emergency response.
 - This new agreement between the White House and the European Commission was negotiated by the [EU-US Trade and Technology Council](#), launched in 2021. The Council serves as a permanent platform for **transatlantic cooperation in areas such as supply chain security and emerging technologies**.

5. THE "QUIET DECLINE" OF COMPETITIVENESS IN CANADA



★ CANADA'S GRADUAL DECLINE

Standard of living OECD countries 19: in 1981- 2021-2060

In 2021 Canadian dollars per capita GDP at purchasing power parity

From the report of [the Macdonald Commission](#) in 1985 to that of [the Council of Canadian Academies](#) in 2018 and those of the OECD and the IMF, some of which are cited in this document, there is no shortage of studies describing the persistent weaknesses in our capacity for innovation and productivity.

In a [report published in October 2021](#), the OECD forecasts that, at best, Canada will be able to achieve real GDP per capita growth of just 0.7% per year over the period 2020-2030⁴⁰. **This trend puts us in second-to-last place among advanced countries.**

The persistent weaknesses in our innovation and productivity capacity are highlighted in the previously cited study by the [Centre for Productivity and Prosperity - Walter J. Somers Foundation \(CPP\)](#) in Canada's productivity gap.

⁴⁰ For more information, see the commentary published in the Business Council of British Columbia: [OECD predicts Canada will be the worst performing advanced economy over the next decade...and the three decades after that](#), 14 December 2021.

The comparative analysis of Canada's performance is developed in the [most recent comparative review](#)⁴¹ of the Transatlantic Subnational Innovation Competitiveness Index (see highlights in the box below).

Highlights⁴² :

- Canada is facing a growing shortage of knowledge and skills in the digital and STEM (Science, Technology, Engineering, Mathematics) fields.
- This shortage has repercussions on short-term employment, as well as on long-term economic growth. To bridge this gap and improve professional, scientific, and scientific and technical employment levels in Canada, decision-makers need to invest in training and skills development.
- By doing so, Canada can further improve the knowledge and skill levels of R&D personnel by increasing the number of Canadians entering the research and technical fields.
- **One of the reasons why it is vital for Canada to increase the effectiveness and impact of R&D is to boost the country's productivity levels, which have been falling for a long time:**
 - **In fact, each hour worked by employees contributes \$16 less to GDP in Canada than in the United States.**
 - **Canada, along with its provinces, must make increased productivity growth a key element of its innovation strategies (hence the need to act now to resolve supply chain challenges and achieve the single domestic market. Author's note)**
 - Furthermore, most Canadian provinces export very few high-tech products.

Canada's university sector, considered a driver of innovation, is inadvertently contributing to this persistent weakness in our capacity for innovation and productivity, according to a study published⁴³ in April 2023 by the Centre for International Governance Innovation (CIGI). Canada's fifteen most research-intensive universities account for 79% of all funds allocated to competitive research in Canada and 83% of all contract research in the private sector in Canada.

In a context where companies invest little in research and development, the CIGI study notes that the Canadian university sector, which performs much less well in terms of commercialization than its American counterparts, unwittingly encourages a strong tendency for intellectual property generated in Canada (including patents) to end up in the hands of foreign companies:

⁴¹ For more information, see the interactive table: "The Transatlantic Subnational Innovation Competitiveness Index: [Data Visualization](#)" ITIF

⁴² To find out more about the methodology, [consult this site](#). Free translation by the author

Source: [The Transatlantic Subnational Innovation Competitiveness Index Report](#)

⁴³ "An Economic Mirage How Canadian Universities Impact Freedom to Operate"-James W. Hinton, Mardi Witzel and Joanna Wajda: CIGI Papers No. 274

"Inadvertently, but in very real terms, federally funded⁴⁴ U15 research generates more economic benefits for foreign companies and countries than it does for Canada.

In the final analysis, Canada's good results in terms of invention are not synonymous with Canadian innovation. Invention is about creating something new, while innovation is about using it; in one case, it's about making a leap and in the other, it's about reaping the rewards. Far too often, Canada does not reap the rewards of its own invention"⁴⁵ .

In its latest [World Economic Outlook](#), EDC Economics expects Canada's domestic economy to shrink to just 0.2% growth in 2023, driven by lower commodity prices, slower housing market activity and high consumer debt. The gloomy outlook for global growth and the reduction in our market share are forcing us to think differently:

Since the start of the millennium, the contribution of exports to GDP has fallen from 38% to 30% by 2021. In the words of EDC Vice-President and Chief Economist Stuart Bergman: *"The reason for this drop is simple: Canada is losing market share, even though exporters have never been so globalized and continue to reap the benefits of sourcing outside the country and diversifying their supply chains.*

“Nevertheless, our decline is more marked than that of other developed markets. For a small open economy like Canada, dependent on international trade, this disappointing performance has real consequences for the country's growth potential.” (Stuart Begman)

In 2000, Canada's contribution to world merchandise exports was around 4%. At the time, our country was in the "big league", even though it generated just over 2% of global GDP. By 2021, that share has been almost halved to just 2.3%⁴⁶ . Canada has lost share as other markets have emerged.

Most of our exports go to a handful of traditional trading partners; our exports to advanced economies account for almost 90% of our total foreign sales. These markets represent just over 50% of the global economy, but barely 14% of the world's population.

This concentration is problematic given that these countries are experiencing slower growth, are in the later stages of their development and are home to populations that are generally older and shrinking.

This has an impact on the speed at which this population consumes, and the rate at which it imports products from the rest of the world. In fact, over the past decade, growth in Canada's exports to advanced economies has been fairly modest. Given that long-term growth potential in these markets tends to be around 2%".

It is safe to assume that the situation will not change much.

⁴⁴ **U15**: this acronym groups together some of Canada's most research-intensive universities, accounting for 79% of all funds allocated to competitive research in Canada and 83% of all contract research in the private sector in Canada. The article cited in the previous reference lists these universities.

⁴⁵ Source: CIGI Paper No. 274 in reference (53) page 2

⁴⁶ For more information: read the economic commentary published by EDC on February 16, 2023: [Canada: diversification is the key to growth](#) .

MOVING INTO "ACTION / COLLABORATION / TRANSFORMATION MODE": SOME POSSIBLE OPERATIONAL SOLUTIONS

Some of the avenues for solutions identified in this report stem from recent initiatives underway in the federal public service and in Quebec. They deserve to be highlighted for their transformative potential. Others stem from similar international initiatives, and some are the result of an analysis of relevant precedents and experiences. What they all have in common is their operational nature and their emphasis on resolving governance issues, their ability to execute and their more effective use of data.

Most OECD governments are facing similar challenges. Two of them offer recent precedents for independent review initiatives that we could learn from Canada:

- The first is the independent review of the Australian Public Service, the [final report](#) of which was delivered in 2019, and which provides the basis for the accelerated implementation of an [ambitious and sustainable programme](#) of reform of the Australian Public Service (APS).
- The second is detailed in the terms of reference for [the Independent Review of Governance and Accountability](#) announced in July 2022 by the UK Government following the ["Government Reform Statement"](#) published in London in June 2021.

The OECD, for its part, offers very solid and relevant analyses and public policy recommendations, as do the transformative initiatives undertaken by the European Union.

1. FROM FRAGMENTATION TO POOLING AND POOLING OF RESOURCES AND EFFORTS

The "ACT" National Task Force report, like the two reports published the same year by the Council of Ministers Responsible for Transport and the House of Commons Standing Committee on Transport, includes a series of short and long-term recommendations.

Only by jointly implementing these recommendations can supply chain challenges such as operational change, service reliability and resilience, labour shortages, capacity constraints, infrastructure, visibility, regulatory uncertainties, and governance changes be addressed.

The fragmentation of responsibility within the federal government is compounded by the number of jurisdictions in Canada, the number of stakeholders in the sector and the complexity of the bilateral relationship with the United States. To be effective, Canada's response must not only be integrated and coherent, but also agile and focused on results.

The multiplicity of federal and provincial strategies cannot compensate for or mask the damaging absence of a national strategy co-developed and implemented by the federal and provincial governments, port municipalities and private stakeholders.

It is up to the Government of Canada to play its rightful and expected role in bringing together stakeholders from the public and private sectors to facilitate, organize and carry out the necessary multi-stakeholder work that will enable the development and success of a national data and supply chain strategy.

The mobilization required for this coherent implementation will be ensured to the extent that it is based on collaborative initiatives led by champions within regional ecosystems such as those made up of the various corridors and strategic gateways in Canada's supply chain.

This mobilization requires the adoption of "agile" organizational models designed to be both stable and dynamic, with a network of teams within a culture centred on "action, collaboration and transformation" between stakeholders.

Attributes of an agile, high-performance multi-partner collaboration model :

SUSTAINED COMMITMENT FROM STAKEHOLDERS	PROMOTE QUALITY IN THE KNOWLEDGE-SHARING DYNAMIC	A LASER BEAM FOCUSED ON PRECISE, MEASURABLE OBJECTIVES	AN INDEPENDENT FORUM
<ul style="list-style-type: none"> <input type="checkbox"/> Champion(s) entered <input type="checkbox"/> Proximity <input type="checkbox"/> Sustained stakeholder engagement <input type="checkbox"/> A modest, proactive multidisciplinary secretariat <ul style="list-style-type: none"> <input type="checkbox"/> with relevant and complementary skills <input type="checkbox"/> Agility and adaptability <input type="checkbox"/> A discreet public stance 	<ul style="list-style-type: none"> <input type="checkbox"/> Rigorous membership and dynamic sharing processes <input type="checkbox"/> Gradual integration of partners <input type="checkbox"/> Quality content for partners <input type="checkbox"/> Strong confidence on the part of partners in the process of sharing knowledge with their peers <ul style="list-style-type: none"> <input type="checkbox"/> Strict confidentiality and non-attribution <input type="checkbox"/> No competition between partners <input type="checkbox"/> Ongoing feedback from members 	<ul style="list-style-type: none"> <input type="checkbox"/> Unique value proposition: create a common data space for a: <ul style="list-style-type: none"> <input type="checkbox"/> more flexible, resilient, competitive and efficient supply chain. <input type="checkbox"/> Easy access to decision-makers and relevant key contacts <input type="checkbox"/> The Forum's leverage with public and private partners <input type="checkbox"/> A coherent approach to programming and partnership development <input type="checkbox"/> Focused on results, not events (no speeches, just conversations and exchanges) <input type="checkbox"/> Relevance to partners' priorities <input type="checkbox"/> Measurable impact 	<ul style="list-style-type: none"> <input type="checkbox"/> Not a lobby <input type="checkbox"/> Politically neutral <input type="checkbox"/> No public statement <input type="checkbox"/> Discreet but not secretive <input type="checkbox"/> Not a chamber of commerce

The scale of the challenge posed by the state of the supply chain and its impact on Canada's economic recovery, its productivity and the creation of a single, competitive domestic market are major. Tackling it requires a new conceptual framework adapted to the current geopolitical context, the accelerating climate crisis, and the digital transformation.

The governance and delivery capacity challenges facing public policy in Canada require a systemic response, at the heart of which lies the transformation of our operating and collaboration models. This imperative applies not only to public stakeholders at federal level, but also to their counterparts at provincial level and in the private sector.

Multi-stakeholder engagement and collaboration requires the establishment of open and inclusive processes in which :

- All relevant stakeholders are represented, their roles, responsibilities and methods of participation identified, and their various interests recognized and made transparent.
- Appropriate mechanisms ensure that the interests of all stakeholders are considered in the design, implementation, and monitoring of data governance frameworks.
- Stakeholder comments are given appropriate attention and consideration and a justification is given where comments are not taken into account.

This need is recognized by the three public policy reports, which make important recommendations for a national approach that will enable Canadian governments and key private sector players to work together to create digital data centres that will improve planning, real-time decision-making, and contribute to the efficient and reliable management of Canada's complex transportation network. They also recommend a modernized regulatory framework that takes into account the future needs of an evolving transportation system.

2. PERSPECTIVES ON THE RECOMMENDATIONS: MODES OF GOVERNANCE, COLLABORATION AND ORGANIZATION

The three reports published in 2022 make eighteen recommendations on governance, collaboration, and organization, including ten on governance/collaboration and eight on organization (see table on page 27). Taken as a whole, these recommendations and the accompanying narrative highlight a number of key points:

- The legislative and regulatory frameworks need to be modernized and simplified.
- The adoption of new, effective mechanisms for collaboration, co-creation and multi-partner implementation focused on results at all levels.
- A necessary reform of the structures and responsibility centres of the federal civil service to promote agility, collaboration, the sharing of data and knowledge, and performance.

Six of these recommendations call for specific comments (the recommendation numbers are taken from the table on page 27):

<p>10) Adopt a new legislative/regulatory framework for greater data sharing and transparency. (Parliamentary Committee)</p>	<p>5) Review the mandate of the Canadian Transportation Agency: independence, authority and funding needed to carry out its mandate. (ACT Task Force)</p>
<p>1) Consider creating a pan-Canadian stakeholder consultation table. (COMT)</p>	<p>6) Establish the position of Supply Chain Commissioner at the Ministry of Transport. (Parliamentary Committee)</p>
<p>7) Establish a permanent Advisory Group representative of the main players in the supply chain. (Parliamentary Committee)</p>	<p>2) Create a Supply Chain Office within the Ministry of Transport for all federal departments (ACT Task Force)</p>

The necessary modernization and simplification of the regulatory framework **(10)** is complex; it affects not only the transport portfolio, but the entire machinery of government. The current parliamentary situation is an additional factor of complexity and immobility.

The separate recommendations to review **(5)** the mandate of the Canadian Transportation Agency (CTA), by the ACT Task Force, and to create **(6)** the position of Supply Chain Commissioner, by the Parliamentary Committee, deserve further development and should be considered together to avoid duplication.

A parliamentary committee in Ottawa has just taken up the crisis facing the CTA, which is facing a record number of 34,000 complaints and an 18-month delay between the time a complaint is submitted and the time it begins to be processed.

Given the urgency of the situation, the consultations held, and the substantive work carried out by the Parliamentary Committee, the Council of Transport Ministers and the National Supply Chain Task Force should provide a solid basis for "rapid" parliamentary consideration, of the necessary legislative and regulatory amendments tabled by the Government.

The two similar recommendations for the creation of **(1)** a pan-Canadian stakeholder consultation table (COMT) or **(7)** a permanent advisory group representing the main players in the supply chain (parliamentary committee) both respond to the urgent call of the national supply chain Task Force "ACT" : ***the time has come for intensive collaboration!***

These recommendations highlight a major vulnerability not only in supply chain management, but also in the interactions between the public, private and academic sectors.

2.1 The 2023 Federal Budget: Establishment of the Supply Chain Office (SCO)

The March 2023 [federal budget](#) contains 48 references to supply chain challenges and includes a series of measures to strengthen transport systems and supply chain infrastructure such as:

- Funding of \$27.2 million for Transport Canada over five years, starting in 2023-2024, to establish an Office of Supply Chains to work with industry and other levels of government to respond to disruptions and better coordinate actions to strengthen the capacity, efficiency, and reliability of Canada's transportation supply chain infrastructure.
- Working **with** industry, provinces, territories, and Aboriginal peoples to develop a **long-term roadmap** for Canada's transportation infrastructure to better plan and coordinate the investments needed to support future business growth.
- Funding of \$25 million over five years, starting in 2023-2024, for Transport Canada to work with Statistics Canada to **develop transportation supply chain data** that will help reduce congestion, make our supply chains more efficient, and inform future infrastructure planning - using existing Transport Canada resources to advance this measure.
- Amendments to the Canada Transportation Act to give the Minister of Transport the power to require shippers using federally regulated transportation services to provide data.
- Amendments to the Canada Transportation Act to temporarily extend, on a pilot basis, the interswitching limit in the Prairie provinces to enhance rail competition.
- A review of the Shipping Conferences Exemption Act to improve maritime competition.

These measures are a down payment on Canada's National Supply Chain Strategy, which will be published in the coming months and will be informed by the recommendations of the National Supply Chain Task Force report (p. 119).

On the face of it, the March 2023 federal budget endorses one of the strategic recommendations of the National Supply Chain Task Force (ACT): the establishment of a Supply Chain Office (SCO) within Transport Canada:

- The limited definition of the SCO's mandate in the federal budget is open to interpretation. On the face of it, it is much narrower than that put forward by the National Supply Chain Task Force.
- This budget measure raises many more questions than it answers. In the absence of essential clarifications, it is not possible to confirm that recommendation no.^o 1 of the National Supply chain Task Force has been adopted in its entirety by the federal government.
- This initiative raises important intra-and intergovernmental governance issues that will determine its ability to be implemented and its impact on the expected results.

The National Supply Chain Task Force has made detailed recommendations on this proposal. It will be very interesting to see the extent to which these are included in the mandate, governance, and organization of the SCO:

*"Create an **independent** Supply Chain Office to **unify the federal government's responsibility and authority** for transport supply chain management **across all departments**.*

***Rationale:** The fragmentation of responsibility for the national supply chain across many government departments undermines its management. Without a cohesive view and single leadership for the transport supply chain, including the monitoring and reporting of **key performance indicators (KPIs)**, departmental actions could have a negative impact on overall productivity.*

*There is an **urgent need to take a whole-of-department, whole-of-jurisdiction perspective to establish clear accountability and to impose measures that support a highly functional, reliable, resilient and adaptable supply chain.**"* Source: Final Report of the [National Task Force on the Canadian Supply Chain](#).

The report of the national task force("ACT") develops this first strategic recommendation as follows:

- Establish clear and unique leadership within government to meet the challenges of the supply chain and plan for its long-term flexibility and sustainability.
- To kick-start long-term strategic measures, including governance changes and strategy development, while providing an immediate response to problems.
- Maintain the momentum for supply chain improvement and demonstrate the importance of ensuring a reliable, resilient, and flexible supply chain.
- Start creating a comprehensive, long-term strategic plan requiring in-depth consultation.
- Taking action to meet the critical need for additional workers.
- Ensure transparent data and reporting on key performance indicators (KPIs) for government, stakeholders, and the public.
- Identify and mitigate risks more effectively.
- Clarify regulations and provide certainty for stakeholders and investors.

According to the National Supply Chain Task Force the Supply Chain Office (SCO) should have the following responsibilities:

- Develop, implement, and support the national transport supply chain strategy (as described in the long-term strategic measure).
- Establish long-term national transport supply chain priorities (in line with the national transport supply chain strategy) and ensure that funding is subject to multi-year budget allocations based on national priorities and not constrained by provincial or regional equity principles.
- This includes ensuring that funding is coordinated across the transport supply chain for reasons of efficiency.
- Lead federal government policy and regulation related to the transportation supply chain, including coordination between federal entities and management of government KPIs.
- Report on the SCO's activities and performance against the transport supply chain KPIs identified in the national supply chain strategy.
- Take action when transport supply chain KPIs are not met.

- Evaluate the effectiveness of investments made by programs such as the National Trade Corridors Fund to ensure that sufficient permanent resources are available for projects (as set out in the National Transport and Supply Chain Strategy). Also ensure that infrastructure investment is in line with national opportunities and strategies, including anticipating technological change.
- Develop and maintain risk and sustainability functions to monitor the evolution of transport technologies, infrastructure, and processes in order to guide future infrastructure investment.
- Working with industry to effectively manage the transport supply chain, including information and data exchange, to prepare for and encourage the use of technologies that will improve the fluidity and resilience of the supply chain.
- Overseeing and coordinating government/industry transportation supply chain crisis task forces in each province, the territories and at the federal level to prepare for and mitigate unforeseen disruptions (e.g. the BC Flood Task Force), particularly those related to natural disasters.
- Requiring transport supply chain stakeholders to resolve conflicting government requirements.

2.2 The current scope of Transport Canada's portfolio responsibilities (TC)

TC's most recent departmental plan⁴⁷ includes some thirty references to the supply chain and puts forward a number of priority measures to improve the performance and reliability of the transport network, enable products to be shipped to markets and stimulate growth in the Canadian economy.

This ministerial plan identifies **three key responsibilities** for Canada's transportation system:

- A. Safe and secure
- B. Ecological and innovative
- C. Effective

The nature of this third essential responsibility⁴⁸, an efficient transport network aims to :

- Support effective market access for products through investment in Canada's trade corridors.
- Adopt rules and policies to ensure that Canadian travellers have access to sufficient options and better service.
- Managing transport infrastructure to maintain value for money for Canadians.
- Dealing with supply chain bottlenecks.

[TC's organizational structure](#) is headed by two Associate Deputy Ministers and includes the department's program and service groups and support groups located at headquarters in Ottawa and in all regions of the country. Transport Canada (TC) administers more than 50 transportation-related statutes and shares responsibility for many others. While the department is not directly responsible for all aspects or modes of transportation, it is committed to providing key leadership in ensuring that all parts of Canada's transportation system work effectively together.

⁴⁷ For more information, consult Transport Canada : [Departmental Plan 2022-2023](#)

⁴⁸ Source: Transport Canada: [Departmental Plan 2022-2023](#) page 38

The “ACT” National Task Force rightly stresses the urgency of adopting a holistic perspective that extends across departments and administrations to establish clear accountability and to impose measures that support a highly functional, reliable, resilient, and adaptable supply chain.

TC's ministerial responsibility is broad; however, it must be recognized that its effective exercise requires the ongoing collaboration of several federal departments and agencies, as well as other levels of government in Canada. It would be appropriate to clarify the department's legislative mandate by formally confirming integrated supply chain management in Canada and by identifying one of the two associate deputy ministers as the **deputy minister responsible for an interdepartmental supply chain secretariat**.

The deputy minister of the supply chain would be the champion within the federal public service and chief negotiator at intergovernmental and international level. The portfolio's various responsibility centres and resources would be consolidated under his or her responsibility.

Transport Canada's (TC) portfolio⁴⁹, with its 53 organizations, is already one of the largest and most diversified in the federal government.

However, this department does not have the status nor the scope of the mandate of central agencies such as the Privy Council Office (PCO) and the Treasury Board Secretariat (TBS):

- PCO's mission is to help the Government deliver on its priorities. Working with other departments and agencies, PCO advances the government's public service agenda by supporting the Clerk of the Privy Council in her role as Head of Government⁵⁰.
- For its part, the Treasury Board Secretariat⁵¹ (TBS) is the central body that acts as the administrative arm of the Treasury Board, which :
 - Acts as the government's board of directors.
 - Oversees the government's financial management and spending and deals with human resources issues **and digital transformation initiatives**.
 - It is the employer of the civil service.
 - Establishes general guidelines and standards for administration, personnel management, finance, and organizational practises across government.
 - Acts as a committee of the Board in approving regulatory policy and regulations, and most orders-in-council.

The strong interdepartmental, intergovernmental, and international dimension of this fundamental multisectoral issue of the supply chain directly challenges the entire government machinery in Ottawa, and in particular its two central agencies, the **PCO** and the **TBS**. What's more, the supply chain faces complex, global problems. These agencies draw on different areas of expertise (multidisciplinarity) and different governments (multilateralism). They are key to managing the national security challenge posed by Canada's supply chain in two of its critical operational dimensions: execution capability and data gaps.

⁴⁹ To find out more, click on the following link: [Transport Canada portfolio](#).

⁵⁰ Source: Privy Council Office-[Departmental Plan 2023-24](#)

⁵¹ Source: [Treasury Board of Canada Secretariat 2023–24 Departmental Plan](#)

In this regard, it is very telling to note that the Prime Minister of Canada has appointed the Deputy Prime Minister and Minister of Finance to co-chair the **Canada-U.S. Bilateral Working Group**, which was created during President Biden's visit to Ottawa on March 24 to **enhance cooperation on critical energy opportunities and supply chains. The one-year mandate will focus on strengthening supply chains** for electric vehicles and renewables, critical minerals and rare earth metals, grid integration and resilience, conventional and advanced nuclear energy technologies, among other areas that enhance our collective energy security⁵² .

The [English text published by the White House](#) is more direct than the French version offered by the Prime Minister's Office: *"The United States and Canada launched a one-year **Energy Transformation Task Force** chaired by the **U.S. Special Presidential Coordinator for Global Infrastructure** and **Canada's Deputy Prime Minister** to work across the spectrum of the clean economy. The task force will accelerate cooperation on critical clean energy opportunities and supply chains, including but not limited to, securing, and strengthening renewable energy and electric vehicle supply chains, critical minerals and rare earths, grid integration and resilience, advanced and conventional nuclear energy and other areas that advance our collective energy security, and to avoid and reduce disruptions to our integrated and mutually supportive supply chains."*

We do not know the specific reasons for this appointment, but we can only assume that there were some functional considerations in support of this decision. We can only speculate at this point that the Ministers of Transport on both sides of the border were not selected because of the governmental importance and political visibility of this issue in Canada and the United States, its interdepartmental scope, the geostrategic dimension of the cross-cutting mandate and the symmetry of the status of the two co-chairs.

3. "ADVANTAGE SAINT LAURENT" AND THE INTELLIGENT ECONOMIC CORRIDOR

In June 2021, the Quebec government unveiled the vision of [Advantage St. Lawrence](#) which succeeds the Maritime Strategy that ended in March 2020. This new strategy, for which a budget of nearly **\$927 million** has been earmarked for implementation, is based on three orientations:

- Providing the St. Lawrence with modern, competitive port infrastructures.
- Ensuring efficient navigation on the St. Lawrence that respects ecosystems.
- Offering maritime communities promising and sustainable development opportunities.

Twelve measures stem from these orientations and are set out in an [initial action plan for the period 2020-2025](#). These measures are designed to enhance the economic potential of the maritime sector while promoting the optimal and responsible use of Quebec's maritime resources.

- One of these measures retains our attention and our interest for its nature and its transformative potential: the establishment of a [smart economic corridor](#) aimed at making Quebec's maritime space a place where the stakeholders can take advantage of new information technologies, artificial intelligence and automation to improve their operations and reduce their environmental footprint.

⁵² For more information, see the [joint declaration](#) and the [information memorandum](#) of 24 March 2023

- **This pioneering initiative, centred on maritime transport in Quebec's St. Lawrence River region should be the start of the implementation of** an intelligent supply chain within the central link constituted by the essential St. Lawrence Great Lakes corridor.
- It can trigger the necessary transformation in the way we organize and collaborate, for the benefit of our safety, our economy, our environment, and our social cohesion.

An investment of 232.6 million is allocated by the government of Quebec the creation of a smart economic corridor, as well as managing maritime risks and protecting ecosystems. Of this amount, \$24.1 million will be set aside until 2025 to deploy the first components of the smart economic corridor in collaboration with the maritime industry and other government partners.

The Quebec Smart Economic Corridor Table, a multi-stakeholder governance structure co-chaired by the ministère des Transports et de la Mobilité durable du Québec and the St. Lawrence Economic Development Council (SODES), was set up in winter 2022 to **oversee the implementation of the Smart Economic Corridor**. Some twenty members representing port authorities, shipowners, the logistics chain, academia, and a number of Quebec and federal government departments and agencies make up the table.

This Intelligent Economic Corridor table has adopted medium and short-term visions to guide the implementation of this vast corridor project. In the current first phase, **the maritime industry players have been tasked with defining the strategic directions of the Intelligent Economic Corridor** and laying the foundations for collaboration aimed at enhancing the value of data sets by means of an exchange platform.

This is indeed a vast project, with an inclusive ambition which should generate a strong and direct interest amongst **all the stakeholders in the St. Lawrence-Great Lakes (SLGL) economic corridor in Quebec and Ontario: the central link in the Canadian and North American supply chain**. With the support of the federal, Quebec and Ontario governments, the Advantage Saint-Laurent initiative opens the door to :

- The extension in 2023 of the Quebec intelligent economic corridor table into a multi-partner public/private network for sharing data and exchanging knowledge applied to intermodal transport and trade.
- The achievement by 2030 at the latest of a **common data space in the Great Lakes/St. Lawrence Seaway trade corridor** as a strategic asset of Canada's essential intermodal transport and supply chain infrastructure.

For its part, the March 2023 Quebec budget contains 13 references to supply chains and 21 to transport, including budgetary measures aimed at increasing productivity and stepping up innovation efforts:

- Innovation in transport: \$55 million over three years.
- Clean technologies and the circular economy: \$30m over three years.
- Electrification of the Contrecoeur terminal: \$75 million.
- The digital transformation offensive: \$50 million over two years.
- The road network has the largest share, with 21.0% of investment under the Plan québécois des infrastructures (PQI)⁵³.

⁵³ Source: Chaire en fiscalité et en finances publiques: Regard sur le Budget 2023-2024 du Québec, March 22, 2023

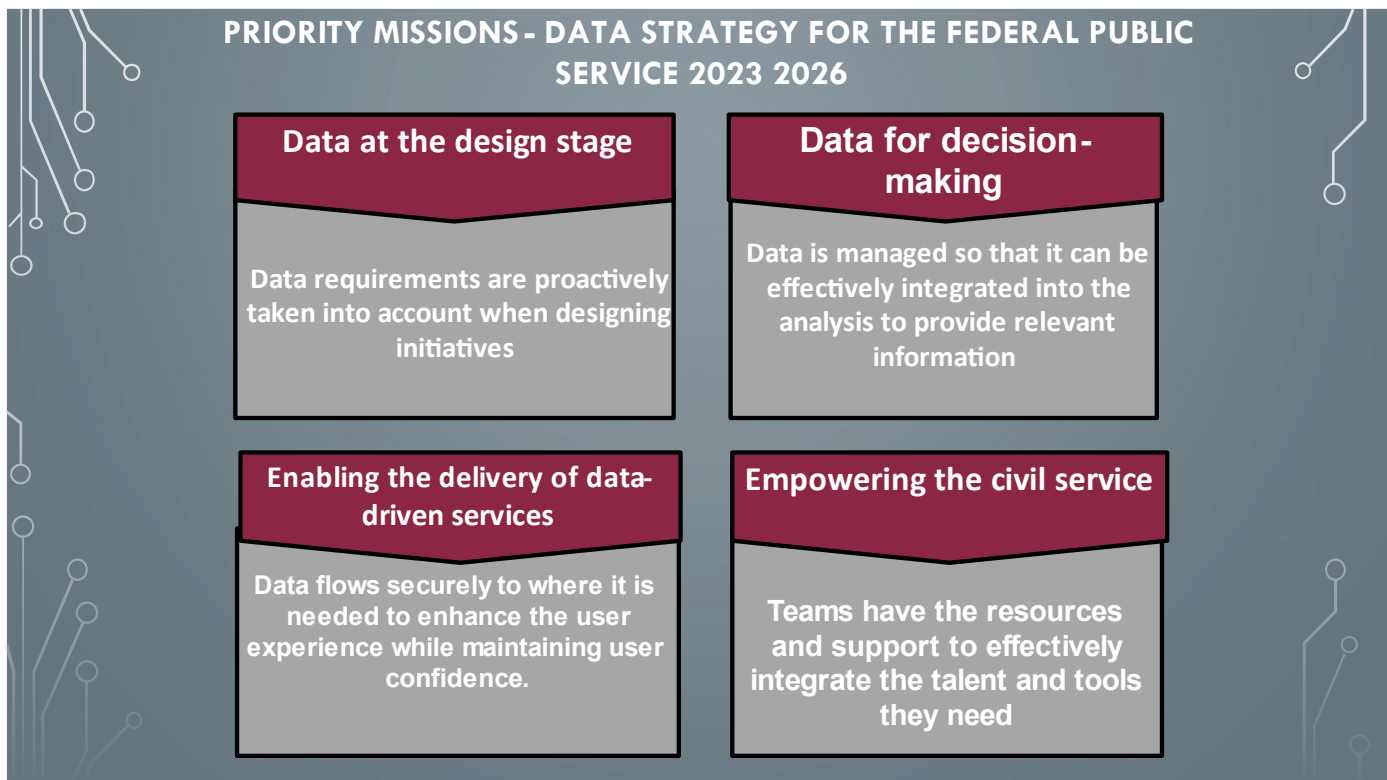
4. TOWARDS A COMMON DATA SPACE FOR CANADA'S SUPPLY CHAIN

The proposed national project:

- responds to the urgent call of the National Supply Chain Task Force to, among other things: digitize and create end-to-end supply chain visibility for efficiency, accountability, planning, investment, and security.
- Enables all levels of government, investors, business operators and other stakeholders to plan better, including through supply chain visibility, data, and analytics.
- Is required by the development (proposed in the 2023 federal budget) of Canada's National Supply Chain Strategy.
 - The strategy is due to be published in the coming months and will be informed by the recommendations of the National Supply Chain Task Force report (“ACT”).
- extends and amplifies, through its geostrategic complementarity, the establishment of the [intelligent economic corridor](#) included in the [first action plan for the period 2020-2025](#) of the Quebec strategy [Advantage Saint-Laurent](#) ;
- proposes the creation of a common data space based on a concrete international precedent set by the European Union, Canada's strategic partner, whose Council of 27 Heads of State and Government [confirmed in March 2021 that it would speed up the implementation of common data spaces](#), in particular by guaranteeing access to and interoperability of data.

The proposed creation of a common data space directly supports the strategic priorities of the federal government's new blueprint, [Canada's Digital Ambition 2022](#), and is fully aligned with its four strategic themes and twelve action priorities for data-driven digital services and deliverables for the next three years⁵⁴. Moreover, it contributes directly to the four priority areas of the [2023-2026 Data Strategy for the Federal Public Service](#) as illustrated in the following table :

⁵⁴ See: Section on Canada's transformative digital agenda: pages 34 and 35 of this Burgundy Report



4.1 Experience acquired and reference framework.

The proposed action plan stems from the three complementary 2022 public policy reports and the twenty-three (23) recommendations on data: this area of action makes up a quarter of all the recommended measures. It is fully aligned with the federal government's new [Digital Agenda for Canada](#).

This roadmap supports and extends Transport Canada's data strategy and the multi-partner development of the [Canadian Centre for Transportation Data \(CCTD\)](#)

As part of this initiative, Transport Canada and Statistics Canada will collect and share new data, performance indicators, analyses, and research on transportation in Canada. The CCTD is an ambitious project, which should make it possible to :

- Establish new partnerships with industry, transport users, researchers, and other levels of government.
- Make better data, analysis, and information about the national transport network available.
- To develop new tools and applications to promote the pooling of information and knowledge in the field of transport, with a view to improving understanding and informing decision-making.

The mobilizing roadmap towards a common data space for Canada's supply chain is inspired by [Advantage Saint-Laurent's](#) forward-looking Smart Economic Corridor vision and builds upon and appropriately integrates the experience gained from various initiatives and programs implemented in Canada, the United States and Europe⁵⁵, including the [“Stratégie d'intégration de l' intelligence artificielle dans l' administration publique 2021- 2026”](#) published by the Government of Québec.

Boosting the resilience of supply chains in Canada requires greater coordination, consultation and cooperation between governments and the private sector. Effective pooling of public and private efforts and resources can only increase the capacity to successfully navigate crises, absorb, and recover from shocks, and build collective responses.

If disruption cannot be absorbed by private sector risk management, governments will need to adopt their own coherent risk management strategies to ensure that essential goods remain available. This requires close coordination with the private sector. Anticipating and understanding the nature of these tensions is essential for an accurate diagnosis of the problem. This approach enables decision-makers to identify appropriate policy responses and provide guidance on how to prepare for future shocks.

The challenge of public-private collaboration in improving the resilience of the end-to-end supply chain is attracting the attention of the OECD:

- The way goods are distributed in urban environments profoundly affects metropolitan life. Urban freight flows have an impact on the economic vitality of cities, their environmental footprint, the safety and efficiency of traffic and the way in which public space is used.
- This report explores how deliveries in cities can be made less disruptive and more sustainable. The report looks at how new partnerships, innovative methods, the use of data and intelligent allocation of space can ease the pressure on cities and their residents from the rapid growth in urban goods movements.
- It also examines whether the solutions require new forms of data management, what new types of delivery vehicles might be needed and how players can coordinate more effectively⁵⁶.

A wide variety of geospatial data sources, such as GPS trajectories, geotagged photos, and social media, have become available for research and statistical applications. These new data sources are often generated, voluntarily or otherwise, by private sector organizations and can provide very granular and timely information to policy makers.

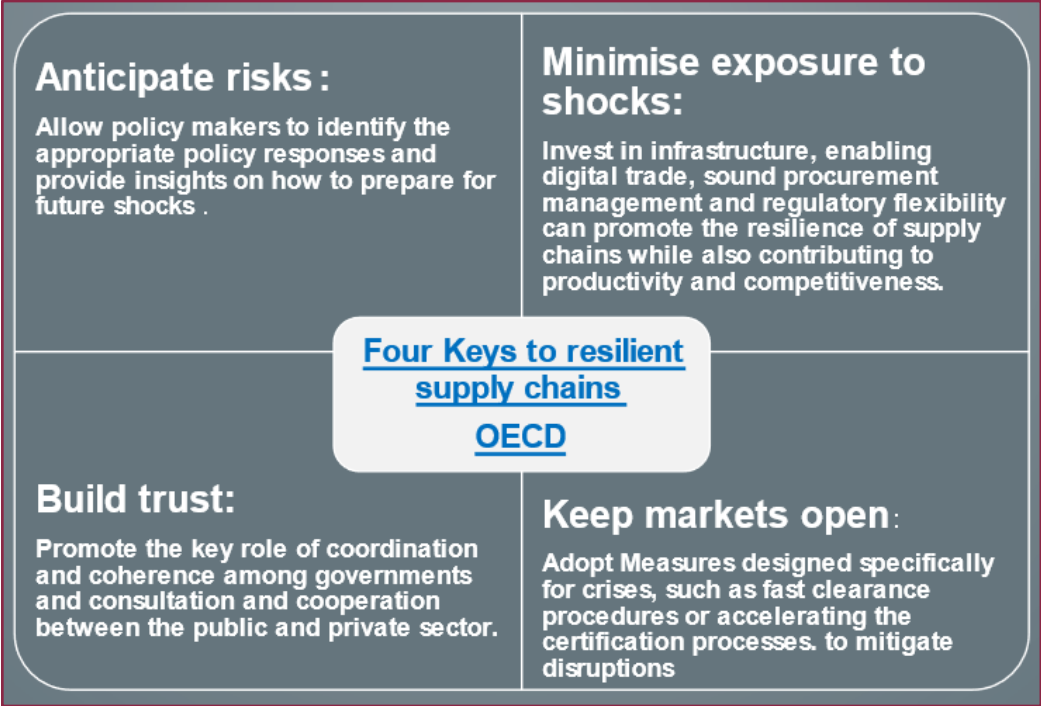
Drawing on the experience of several member countries, the OECD published a working paper in **November 2022** that highlights the potential of combining traditional and non-conventional data from public and private sources. This study argues in favour of facilitating cooperation between data providers and the organizations responsible for public policy.

⁵⁵ Reference: Foreword and acknowledgements section of this report

⁵⁶ ITF [The Freight Space Race: Curbing the Impact of Freight Deliveries in Cities](#), 6 dec. 2022.

Furthermore, the OECD document provides a series of best practices on exploiting private data for the public good and identifies opportunities, challenges, and ways forward for public-private partnerships on data sharing⁵⁷.

In addition, the OECD has just published [an interactive decision-support tool](#) based on **four keys** (see graph below):



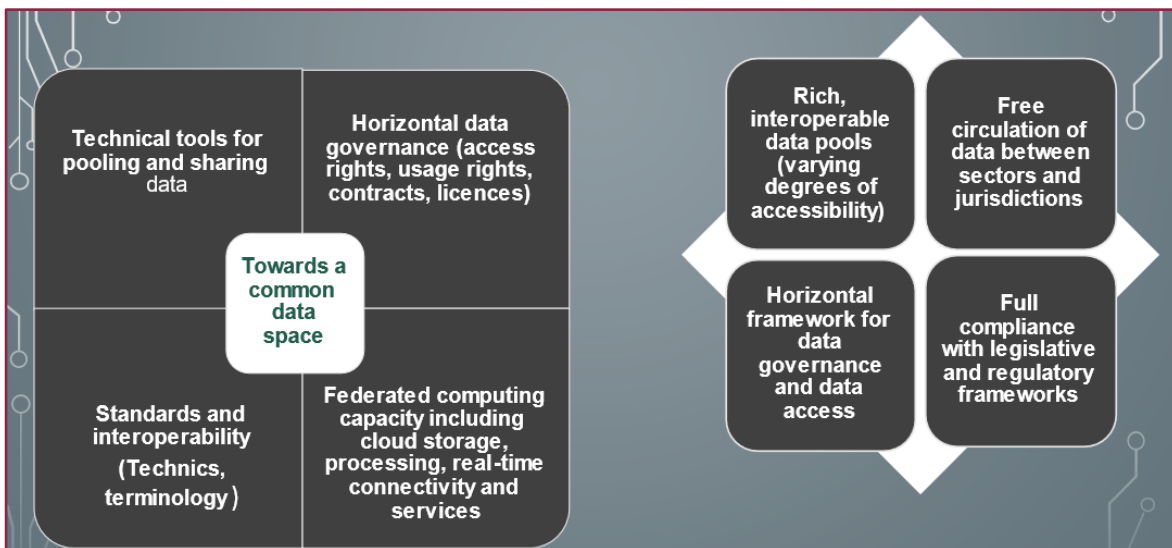
Each of these keys includes issues, policy actions and relevant tools and publications. This database will be updated as new contributions appear. These approaches include risk management strategies at company level, public-private action plans, supply chain stress tests and strategic governance at national level.

4.2 The scope of the common data space for the supply chain: the first milestone of the Saint-Laurent-Grands Lacs (SLGL) trade corridor

The regulatory, legal, and technical barriers to data exchange between organizations cannot be resolved without the creation of a common data space. This can only be achieved by combining the necessary tools and infrastructures and by addressing issues of trust, for example by means of common rules drawn up for this purpose.

⁵⁷ Further information: Using private sector geospatial data to inform policy -Lessons from OECD countries on private-public collaborations, OECD 28 Nov. 2022, ISSN : 27094065 (online)

The creation of a common data space, as a first step, within the St. Lawrence Great Lakes trade corridor will make it easier to access and subsequently share data from the entire Canadian supply chain in a reliable and secure manner. Businesses, governments, and individuals will have control over the data they generate, safe in the knowledge that they can trust how it is used to drive innovation.



This common data space includes :

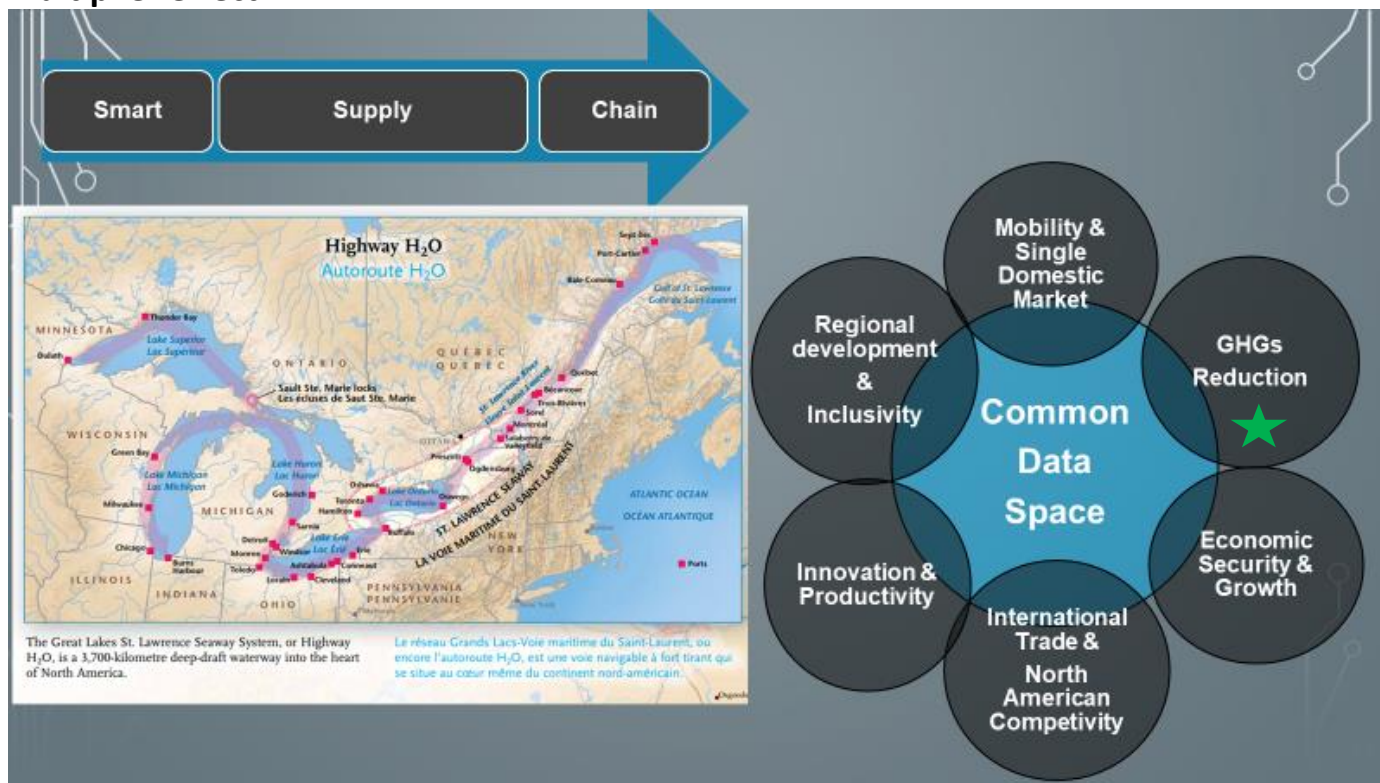
- Deploying federated data-sharing tools and platforms.
- The creation of data governance frameworks.
- Optimizing the accessibility, quality, and interoperability of data, both in domain-specific situations and across sectors.
- A common tool for viewing and analyzing the latest evidence underpinning public policy decisions in real time.

THE MAIN CHARACTERISTICS OF A COMMON DATA SPACE:

- A secure, privacy-protecting infrastructure for pooling, accessing, sharing, processing, and using data.
- A clear and practical structure for accessing and using data in a fair, transparent, proportionate and/or non-discriminatory way, as well as clear and trustworthy data governance mechanisms.
- Rules and values, in particular personal data protection, consumer protection legislation and competition law, are fully respected.
- The possibility for data holders in the data space to grant access to or share certain personal or non-personal data under their control.
- By sharing data, supply chains can become more efficient, and products can be developed more quickly and innovatively.
- Incentives for companies to share data include increased access to the data of other contributors in exchange for access to the data they hold, analytical results derived from shared data, availability of services such as predictive maintenance services, and reduced time and cost to market for products.
- Data made available may be re-used in return for compensation, including remuneration, or free of charge.
- Participation of an open number of organizations/individuals.

Source: EU Commission Staff Working Document on Common European Data Spaces Brussels, 23.2.2022 SWD(2022) 45 final

A common data space for the St-Lawrence-Great Lakes economic corridor: a significant multiplier effect:



The accelerated joint development of a common data space will be a game-changer, not only in terms of solving critical supply chain challenges, but also in terms of the impetus it will generate in the pursuit of fundamental priorities in Canada, including the energy transition.

★ Overall, greenhouse gas emissions from transport have increased by 15% over the last decade (from 2010 to 2019)⁵⁸. Canada's National Inventory Report 1990-2018 shows a reduction in emissions from shipping and an increase in emissions from aviation and road transport. To consult the latest historical estimates of Canada's emissions, including those from transport, go to [Canada's Official Greenhouse Gas Inventory](#). The most recent figures⁵⁹ underline the scale of the challenge:

- In 2021, the transport sector was the second largest source of GHG emissions, accounting for 22% of total national emissions, with 150 megatons of carbon dioxide equivalent (Mt of CO₂ eq.).
- In 2021, GHG emissions from this sector were 4.8% higher than in 2020 (143 Mt CO₂ eq.).

⁵⁸ [Transportation in Canada 2021 - Greenhouse gas emissions](#)

⁵⁹ [Environment and Climate Change Canada \(2023\) Canadian Environmental Sustainability Indicators: GreenhouseCat. no.: En4-144/18-2023E-PDF ISBN: 978-0-660-48132-6, Project code: EC23015](#)

- Between 1990 and 2021, GHG emissions from the transport sector rose by 27%. This rise is attributable to an increase in the number of heavy goods and light passenger vehicles,

A multi-partner collaborative initiative launched in 2022 by the Conference of Great Lakes and St. Lawrence Governors and Premiers deserves to be highlighted in this respect. [The Great Lakes Impact Investment Platform](#) has just been established to promote ecologically sustainable economic growth in the Great Lakes states and provinces - a first of its kind!

The Intelligent Supply Chain achieved, through the implementation of a common data space, will significantly expand Canada's connection to global markets through reliable, real-time access to an interoperable data infrastructure that visualizes, supports and forecasts smooth and efficient trade flows between Canada and global markets, with a priority focus on optimizing the North American Free Trade Agreement and the agreement with the European Union.

The [Infrastructure Bank](#) of Canada is investing close to \$35 billion in infrastructure that supports economic growth, connects communities and helps combat climate change in the priority sectors of public transit, clean energy, green infrastructure, high-speed Internet, trade and transportation. In addition, the bank says it is prepared to make early investments to accelerate infrastructure projects that can be implemented in the short term and have a high probability of future investment.

This is the case for the implementation of the proposed digital infrastructure insofar as the common data space will provide stakeholders with high-value data sets enabling the fluidity, resilience, and competitiveness of the Canadian supply chain.

4.3 Activating the ACT multi-partner forum⁶⁰

The Bourgogne Report proposes that the national supply chain office establish an **independent multi-stakeholder "ACT" forum as soon as possible**. This proposal responds to the two similar recommendations for the creation of a "pan-Canadian stakeholder consultation table" (COMT) or a "permanent advisory group" representing the main players in the supply chain, structured consultations, exchange of expertise, cooperation, and coordination between the main experts from the public (federal, provincial, municipal), the transport and logistics industry and research.

This **multidisciplinary group of high-level experts** will directly support the development of the national supply chain strategy, at the heart of which is the creation of the common data space and the necessary mobilization of stakeholders.

- This operational proposal builds upon the renewed public service data strategy and is inspired by a similar initiative launched by the European Union in 2015: the Digital Transport and Logistics Forum, [DTLF](#).
- It extends and amplifies the implementation of the Smart Economic Corridor launched by [the St. Lawrence Advantage](#) Vision and Strategy.
- **Its potential impact is major.**

⁶⁰ ACT= Action Collaboration Transformation (National Supply Chain Working Group)

The DTLF is an expert group that brings together public and private stakeholders from various supply chain communities. It supports the implementation of relevant stakeholder activities and investments, in particular those aimed at interoperability and large-scale digital data exchange in a common data space. This secure and reliable data sharing space for transport and logistics contributes directly to the elimination of technical, operational, and administrative barriers between and within each transport mode.

The DTLF model essentially aims to interconnect existing platforms and harmonize the services they offer. This initiative does not seek to develop a new global solution managed from a central level.

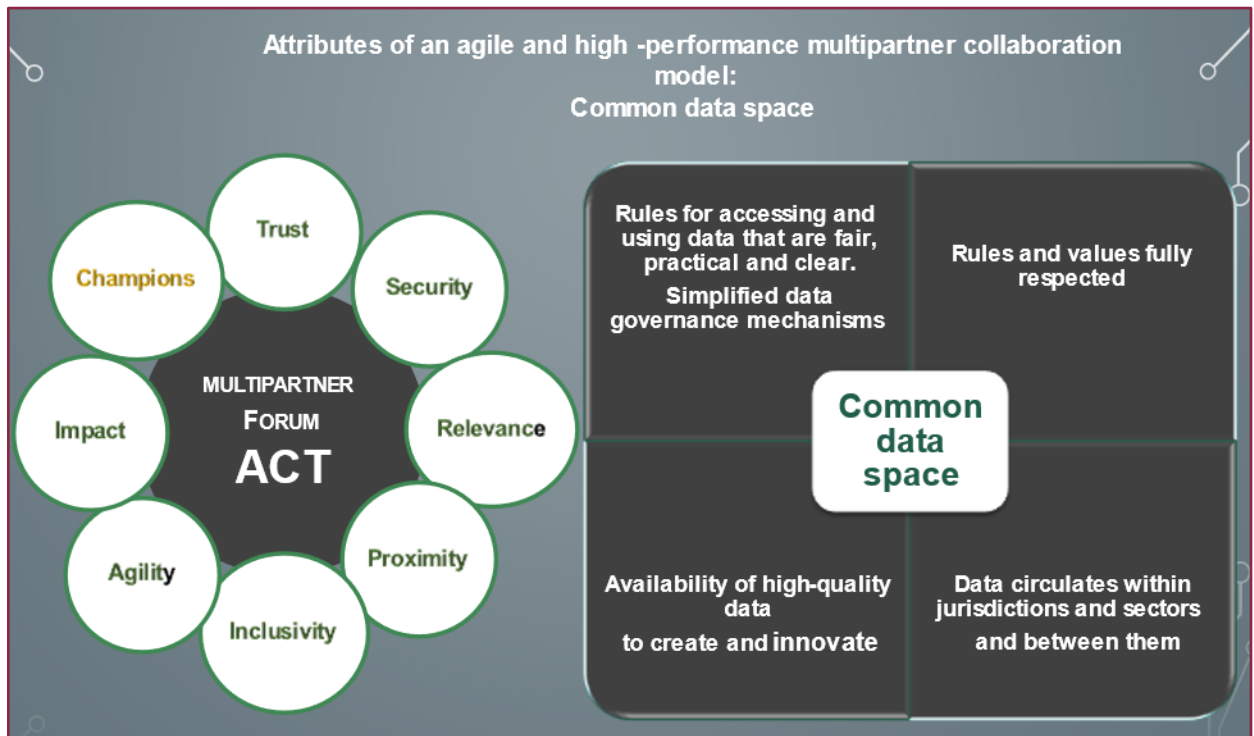
More specifically, the platform backbone provides interoperability for data sharing between individual platforms, created through common protocols (platform interoperability) to support data-sharing services.

This solution allows stakeholders to use the platform of their choice, offering a single registration and a single point of connection to the entire network of platforms, which would apply similar logic to that currently used for Internet access.

In response to the recommendations of the three 2022 public policy reports, the “ACT” task force key operational priority is to optimize the digital interoperability of logistics and intermodal transport in Canada, and to provide a mobilizing impetus to the national supply chain strategy to remove technical, operational, and administrative barriers between and within transportation modes.

The mission of the proposed "ACT" Forum is to structure and transform:

- The immediate creation of a multi-partner public/private network for sharing data and exchanging knowledge applied to intermodal transport and trade.
- The achievement, by 2030 at the latest, of **a common data space** in the St. Lawrence Seaway-Great Lakes trade corridor as a strategic asset in Canada's essential intermodal transport and supply chain infrastructure.



From the outset, the mandate of the **independent and permanent** multi-stakeholder forum will incorporate the relevant priority objectives of the federal government, the Government of Quebec and, where applicable, Ontario, such as those pursued in the Transport 2030 strategic plan, the Climate Action Plan and the Green Economy, the Innovation and Skills Plan, the St. Lawrence Advantage strategy, and the Trade Strategy. This forum will contribute to the development and implementation of the national supply chain strategy.

Created at the initiative and with the support of the Government of Canada, in partnership with the Governments of Quebec and Ontario, in their joint roles as convenors and mobilizers, this "ACT" forum will provide :

- Data inventories enabling public and private stakeholders to know what data exists, where it is stored and how it can be accessed.
- An essential holistic view of all the elements of an integrated supply chain, enabling a complete, real-time assessment of the system's performance.
- Advice and technical expertise in relation to the preparation of coherent public policy initiatives at all levels of government and the adoption of innovative solutions in the field of transport, digital logistics and commerce.

The supply chain challenge is vast, and it will only become more complex over time. Governments in Canada must **act together** now, in conjunction with the collaborative efforts of our allies and partners, notably the United States and the European Union, to ensure the resilience of supply chains in the face of accelerating current and anticipated disruptions, geopolitical conflict and natural disasters.

"Despite our competitive advantages and the fundamental investments we have made over the past seven years, there are two fundamental challenges Canada faces in building a clean economy. First, many of the investments that will be critical to the realignment of global supply chains and the transition to carbon neutrality are large-scale, long-term investments .../... Second, the recent passage of the U.S. Inflation Reduction Act (IRA) poses a major challenge to our ability to compete in the industries that will grow Canada's clean economy." (Budget 2023: A Canadian Plan, March 2023, page 83)

Resolving this national security challenge is demanding. It requires us to :

- Mobilize and pool the public/private resources and multidisciplinary scientific expertise needed to work together to develop and collaboratively implement the strategies underway and the consolidated recommendations submitted in the three supply chain benchmark reports.
- Adopt a new culture of organization and collaborative management of public and private bodies, including the mode of governance and operation of current intergovernmental relations.

This is particularly the case in the supply chain, in policy development, programme design or service delivery, or in creating value for the public, private, not-for-profit and research sectors.

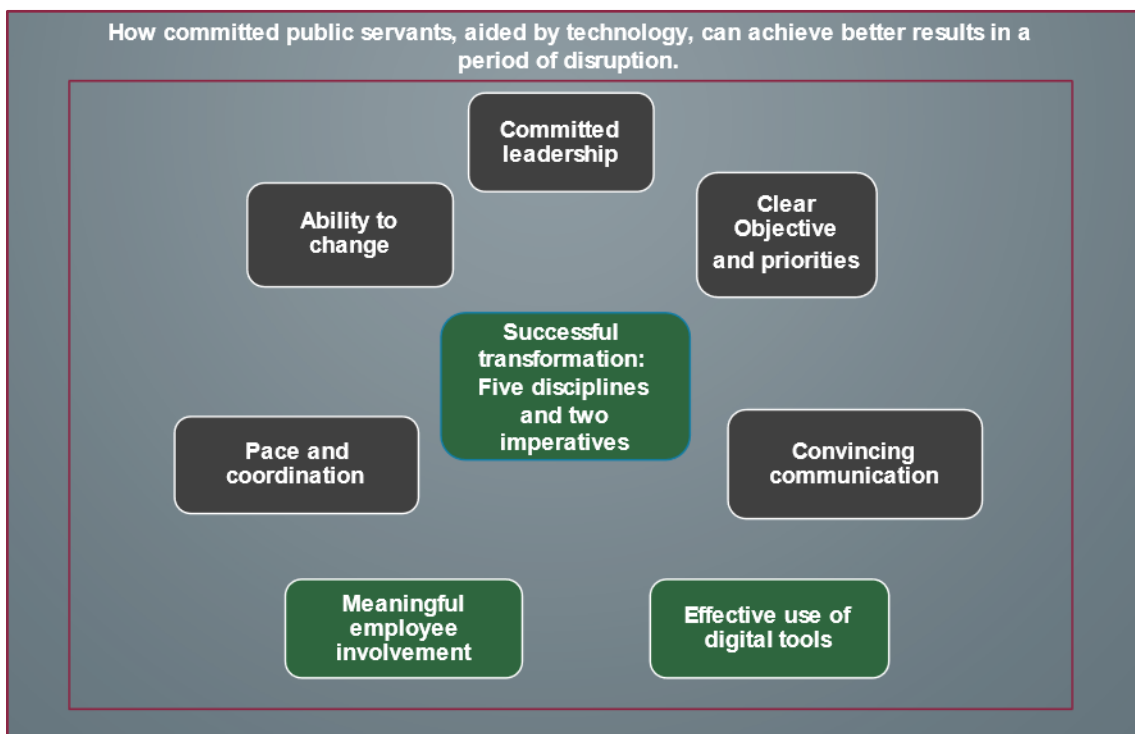
This precarious state of affairs exacerbates the lack of interoperability and data sharing, and the pooling of resources and efforts between the various players, within the various jurisdictions and between the various stakeholders.

The effective sharing of valuable data and the exchange of knowledge are prerequisites for improving the competitiveness of the intermodal transport and trade ecosystem in the St. Lawrence Seaway/Great Lakes economic corridor, just as they are for Canada's supply chain as a whole. Never before, except in wartime, are governments and public services being asked to do so much, so quickly. Public sector leaders are looking for transformational improvements in citizen services, policy outcomes and regulation.

The management, use and sharing of data will be crucial over the next few years. Neither the federal government nor the governments of Quebec and Ontario are yet well positioned or determined to work together to treat data as a shared strategic asset.

Such transformation is difficult to achieve, particularly in the context of fiscal challenges, overloaded organizations, and human resources fatigue. According to a recent McKinsey survey of public sector leaders, almost 80% of major change efforts fail to achieve their objectives in full or within the timeframe set⁶¹. This survey also highlights (as does the Gartner survey below) common factors in the success of successful transformations.

- The success rate is tripled among programs that apply the five disciplines of government transformation illustrated in the figure below.
- The impact of these five disciplines is amplified by two cross-cutting imperatives: the meaningful engagement of public sector employees and the effective use of digital tools.



Source: Figure created by the author based on the contents of the article in reference (63) from McKinsey and Company.

Government leaders need to decide why and how to use digital to optimize or further transform public programmes and services, then prioritize, plan, and implement delivery.

Most governments are undergoing digital transformation to some degree, but the challenge for most is to develop a strategy for the way forward:

- Seventy-two per cent of digital government programmes have accelerated in response to the demands generated by the pandemic, but most are still in the process of optimizing existing services and programmes.

⁶¹ For more information, see : [Transforming government in a new era](#) McKinsey & Company September 14, 2022 | Article

- Fifty-five per cent of digital government programmes fail to extend the impact of digital across their organization. And few are radically transforming public services through digital.
- To achieve this, and deliver a much more adaptable, responsive, and sustainable value proposition to citizens, government organizations will need to be able to re-use technology, architecture, data, and capabilities to continuously adapt to changing regulatory, legislative, and public expectations.⁶²

This complexity and the challenges we face in achieving an intelligent and resilient supply chain in Canada cannot be overstated. The same is true for its central link and ecosystem, the strategic St. Lawrence Great Lakes corridor, whose size and scope are matched only by the complexity of its multimodal freight transport systems and the growing urbanization on both sides of the Canada-US border.

However, as President Biden reminded us during his speech to Parliament in Ottawa on 24 March 2023, quoting one of his predecessors, John F. Kennedy :

"We choose to go to the Moon in this decade and do other things, not because it's easy, but because it's hard, because this challenge is one we are prepared to accept, one we don't want to put off and one we will win.

- *That speech appealed to something deep in America's character, something powerful: **the belief that we can do great things.***
- *This speech inspired an entire generation and was at the root of many of the technological advances that enrich our daily lives today.*
- *This confidence - I believe with every fibre of my being that confidence can turn the boldest dreams into reality.*
- *We've decided to go back to the Moon together! We're going back to the Moon together.*
- *And from there, we look forward to Mars and the limitless possibilities beyond.*

Source: [Remarks by President Biden in Address to the Canadian Parliament](#) March 24, 2023

Because of its geography and the size of its population, spread over a vast landmass, Canada's history and future are linked to transportation, as demonstrated by the transformative national projects of the Trans-Canada Railway, the St. Lawrence Seaway and the Great Lakes, the Trans-Canada Highway, and our earth and space-based telecommunications system.

The history of Quebec and Canada, like our future, is closely linked to the St. Lawrence River. It is up to us to work together to take advantage of the exceptional strategic geographical position of the St. Lawrence to make it a powerful vector for economic, social, and environmental development.

⁶² Source : [The Gartner roadmap for the digital transformation of public administrations](#)

The St. Lawrence - Great Lakes corridor began as a "simple" binational system of locks, canals and channels in Canada and the United States. Now more than a century old, it has become an economic corridor that, on its own, represents a regional economy valued at US\$6,000 billion annually, and the largest freshwater surface ecosystem in the world.⁶³

These great works were not easy to achieve, but to paraphrase the remarks of the President of the United States to Parliament in Ottawa, we achieved them because they were difficult, because we were prepared to accept these challenges, that we did not want to put them off, that we would succeed. That confidence is what can make the boldest ambitions a reality.

Canada's supply chain is the vital artery that feeds our domestic market and our cohesion as a society distinct from that of the United States. As President Biden said in his speech, "*We chose to go back to the Moon together! We will return to the Moon together*". Achieving the proposed common data space for the strategic St. Lawrence Great Lakes corridor is not as complex as space exploration. We are not being asked to go to the moon here.

Achieving an intelligent supply chain in Canada, through the creation of its common data space, is within our reach by 2030 at the latest if we choose to take this step together.

Together, public, and private stakeholders have the resources, knowledge and talent required to successfully complete this major project, which transcends partisan politics and respects the division of jurisdictional responsibilities.

All that remains is for us to share the confidence and determination needed to pool our resources in the interests of a common strategic objective.

Now, more than ever, is the time for bold action and intensive collaboration. The time has come for an historic transformation. The security and future of Canada and Quebec depend on it!

⁶³ Source: [The Conference of Great Lakes and St. Lawrence Governors and Premiers](#)

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