Quebec’s Digital Empowerment: A

Roadmap for Quebec’s Digital Sovereignty

13 October 2026



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Données SOUVERAINES QUÉBEC

“Are we already the 51st state?”

Alain Saulnier

From our banking transactions to our healthcare system, and encompassing our culture and our social and private lives, our daily lives are interwoven with technologies over which we have no control. This dependence on foreign companies – primarily American and politically motivated – places us in a position of great strategic vulnerability, particularly as their values are often diametrically opposed to those of Quebec society.
The risks of this technological dispossession are very real and affect the very foundations of our society:

- **A risk to security and the threat of paralysis:** Against the backdrop of global geopolitical tensions, the spectre of a service shutdown (the *‘kill switch’*) or restricted access to the most advanced artificial intelligence (AI) models is no longer a science-fiction scenario (e.g. the US Department of Commerce directive of 12 June 2026)
- **A threat to our cognitive sovereignty and our democracy:** How can we protect Quebec’s identity, culture and values when the information channels and algorithms that shape public opinion are beyond our control?
- **An economic haemorrhage:** Every year, $16 billion leaves Quebec to benefit foreign technology providers – a capital flight that deprives our economy of the benefits of the digital revolution (details and sources on p. 34).
- **Ethical and environmental issues:** Whether it is the uncertain protection of our personal data, the failure of generative AI tools to respect copyright, or the disastrous environmental impact of mega-data centres, the current model is reaching its limits.



As Alain Saulnier and Monique Simard point out, **there can be no real sovereignty without digital sovereignty.** Yet there is no room for fatalism here. Quebec now faces a historic undertaking, on a scale comparable to the nationalisation of the electricity sector.

To successfully carry out this reclaiming of control, Quebec possesses exceptional assets: green energy, world-class expertise in AI (e.g. Y. Bengio, IVADO, MILA, Loi Zéro) and a distinct Francophone identity that can make its mark on the international stage. The State, through its regulatory capacity and purchasing power, possesses a powerful lever for action to support Quebec in this transition. It is with this commitment to action that the non-profit organisation *Données Souveraines Québec*, representing experts and professionals in the sector, presents this report. Through **five key recommendations**, this document calls on the Quebec government and decision-makers to prioritise digital sovereignty.

It is time for the digital economy to create wealth here, for Quebecers, to serve our model of society and to strengthen our strategic position.

Florian STRICH, Editor-in-Chief, on behalf of the entire Données Souveraines Québec team

Thank you to the whole team!

Données SOUVERAINES QUÉBEC

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03. Digital Economy: Jean-Christophe Verbert & Gabrielle Hurtubise-Radet

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06. Free software & open standards: Marc Laporte, Jacques Berger, Sacha Pignot, Robin Millette, Kitio Fofack, Alain Cisirika

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Executive Summary

As Quebec becomes aware of the risks associated with its technological dependence, it possesses major assets with which to build genuine digital independence. Here is our assessment and roadmap for a transition towards digital sovereignty.

Quebec's strengths

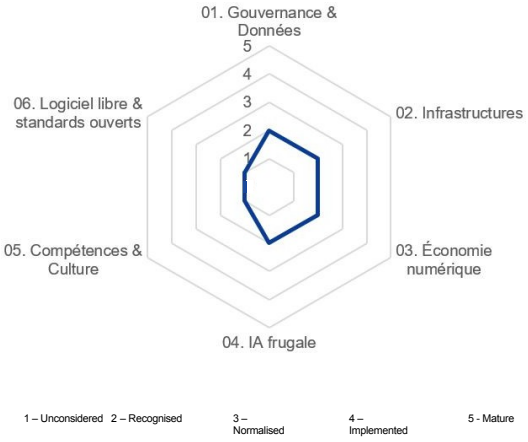
- A robust technological ecosystem, underpinned by green energy and world-class expertise in AI and free software.
- Public procurement that can act as a strategic lever and a benchmark market.
- Universities of excellence, a dynamic culture and a Francophone identity to be promoted internationally.

Quebec's challenges

- Technological and economic dependence on foreign monopolies, which attract investment whilst posing risks to data protection and business continuity.
- The energy, material and water footprint of rapidly expanding generative AI.
- A lack of sovereign public policies to protect cultural identity, regulate content and promote local expertise.

Assessment of the current situation in Quebec

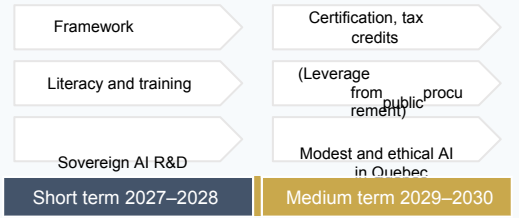
Québec is currently becoming aware of the issues linked to its lack of digital sovereignty, but the concept has not yet been standardised, let alone implemented.



Recommendations

1. Structure the offering using a reference framework and a quality mark
2. Stimulate demand through tax credits
3. Support demand by buying Quebec-made products
4. Develop a culture of digital sovereignty to support supply and demand
5. Frugal AI & sovereignty: developing the Quebec alternative

Roadmap



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Document development process

This document is the result of a collaborative and rigorous process involving dozens of experts across five key stages of consultation, drafting and dissemination.

01
June–July 2026

Mobilisation & Launch

Mobilisation of 42 experts divided into 6 thematic committees.

Survey of more than 100 organisations in Quebec.

02
June – October 2026

Work of the 6 Committees

- Governance
- Infrastructure
- Economy
- Frugal AI
- Culture
- Free Software

03
21 August – 21 September 2026

Interviews

Yves Jacquier, Director of La Forge (Ubisoft's research unit)

Suzanne Guèvremont, Commissioner and Chair of the ONF

Zoé Feger, Director, Axelys

Jean Hamel, Chief Executive, INIS

Simon Brault, Chair, Lanaudière Festival

04
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05
Autumn 2026

Unveiling & Distribution

- 13 October: Launch at MTL Connecte
- Distribution to government departments and political bodies

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Document structure

General organisation and reading guide for the roadmap

Données SOUVERAINES QUÉBEC

01

Introduction

Background, objectives of the initiative and presentation of the founding principles of digital sovereignty.

02

Assessment

An overview of the Quebec ecosystem, identifying current strengths and critical vulnerabilities.

03

Challenge matrix

Assessment and mapping of challenges based on risks, dependencies and the cost of completing the transition

04

Recommendations

Action plan, priority measures, prioritisation and key performance indicators.

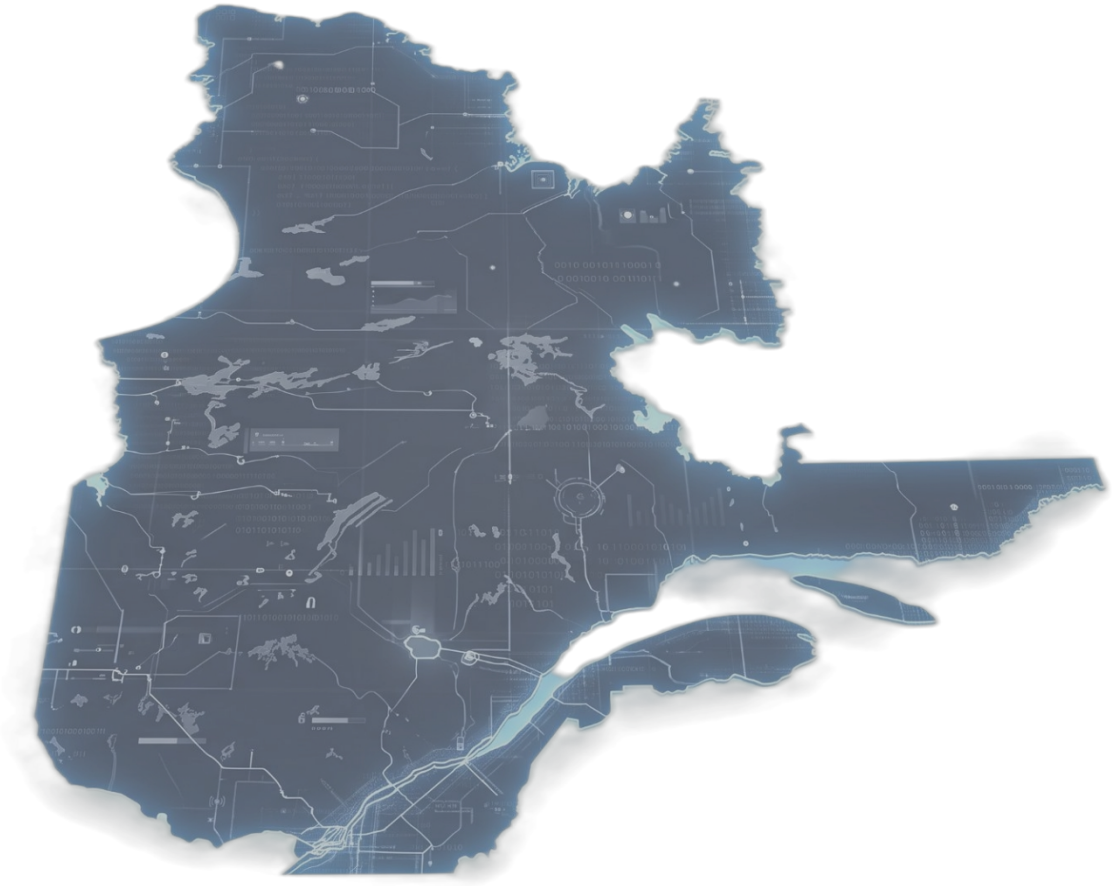
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Roadmap

Timeline for implementing the recommendations, based on their priority, the sequencing of tasks and the organisation’s maturity

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1. Introduction



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Ensuring Québec's digital sovereignty means creating wealth here by buying Québec-made products, protecting our data and charting a course for the future of AI that remains true to our culture, our identity and our environmental values, whilst being tailored to our hydroelectric potential.

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Québec’s digital sovereignty: Moving from ambition to action

Digital technology is no longer merely a support tool, but the **strategic foundation of the State, public services and the Quebec economy**. Faced with capital flight and the strategic vulnerability linked to dependence on foreign suppliers, the protection of our data and our technological operating models is a national imperative.

CAD 27 billion **(Quebec’s ICT market in 2024)**

60 per cent **non-sovereign (CAD 16 billion)**

CAD 6.8 billion **in additional GDP in 5 years**

Details and sources: slide 34

Who is this roadmap aimed at?

The Government of Quebec and the leaders of major Quebec organisations, whether public or private.

Why now?

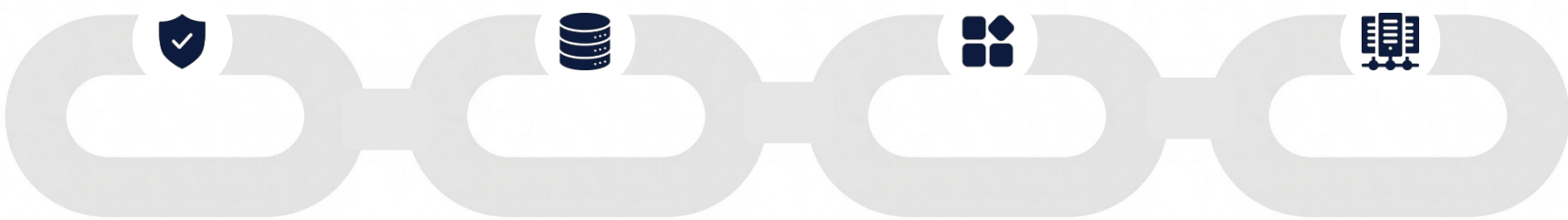
The suspension of Canada-US trade negotiations is raising awareness and creating a window of opportunity for political action. The appointment of ministers following the provincial election is the right time to set priorities for the next four years.

To make Quebec’s digital sovereignty **verifiable** and translate it in concrete terms into **strategic autonomy**, **jobs** and **sustainable economic value.**

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Taking control of every link in the digital chain

Digital sovereignty refers to the actual capacity of a state or organisation to protect its data and enforce its rules governing that data, as well as its applications, models and infrastructure. It also implies being able to continue operations and change suppliers without excessive dependence on any single actor, technology or jurisdiction.



Rules	Data	Applications / Models	Infrastructure (location)
e.g. laws, policies, guidelines, reference frameworks, processes, business workflows, contractual clauses, roles and responsibilities, training, awareness-raising, crisis management plans, tender criteria, etc.	e.g. personal information, confidential data (intellectual property, trade secrets). Structured or unstructured data (documents), etc.	e.g. open-source software, Canadian-controlled proprietary solutions, sovereign or open-parameter AI models	e.g. Quebec/Canadian data centres. Foreign suppliers from allied countries with no risk of legal extraterritoriality or data exfiltration.

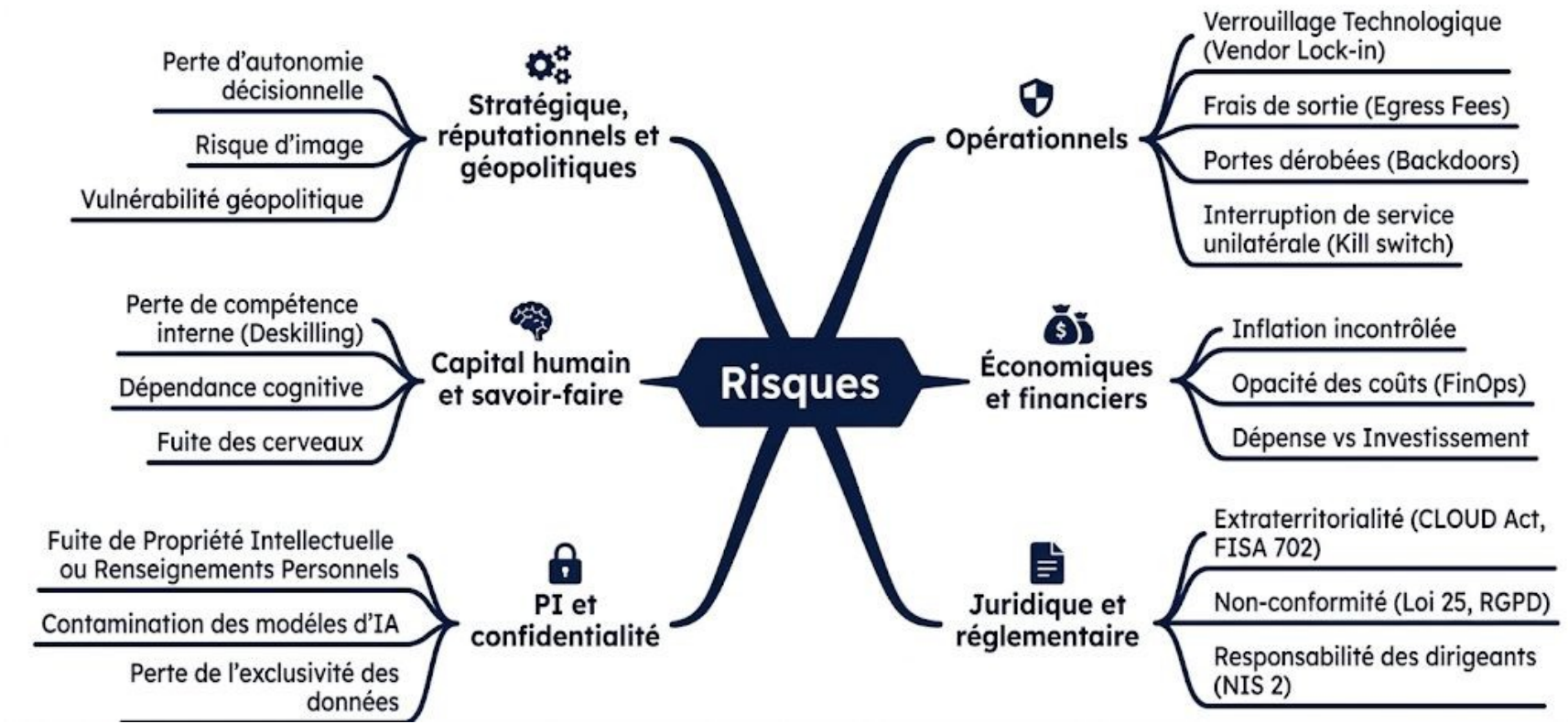
Traceability, explainability

Digital sovereignty ≠ merely the localisation of data in Quebec (data residency)

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Remaining digitally dependent is a risky gamble…

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Source: Persévère Conseils Inc.

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Quebec has undeniable strengths on its path to digital sovereignty

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01. Institutional capacity

Political, legal and institutional capacity to transform policy directions into shared requirements.

02. Technological ecosystem

An ecosystem comprising hosting, connectivity, cybersecurity and managed services capable of supporting on-premises or hybrid architectures.

03. Excellence in AI

World-renowned research in artificial intelligence, combined with initiatives promoting responsible and resource-efficient AI.

04. Energy & Climate

A largely renewable energy mix, a climate conducive to energy efficiency and existing technical expertise.

05. Open-source software

A well-structured open-source ecosystem, with system integrators, communities and existing public use cases.

06. Public procurement

A public sector contract large enough to serve as the primary market, a testing ground and a benchmark client.

07. Data & the Francophone world

High-value data assets and a Francophone presence capable of supporting solutions that can be exported to Canada, the Francophone world and Europe.

08. Culture & mobilisation

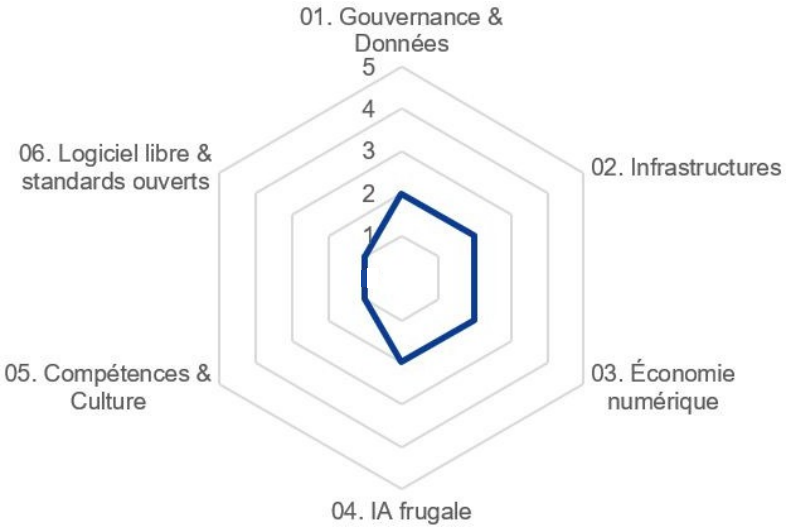
Culture as a vehicle for identity that fosters collective mobilisation.

09. Education & Universities

A world-class education system (our universities) which is a key driver of all forms of transformation.

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But it continues to face major challenges



Maturity Scale Level 1 – Unconsidered Level 2 – Recognised Level 3 – Standardised Level 4 – Implemented Level 5 – Mature

Area	Maturity	Existing*	Target
01. Governance & Data	2. Aware	Isolated initiatives by a few ministries or companies, without a formally established overarching framework.	Québec has a reference framework defining verifiable criteria for digital sovereignty. Critical projects incorporate these criteria from the design stage onwards.
02. Infrastructure	2. Aware	Occasional hybrid hosting for security reasons. Fallback plans that are either non-existent or purely theoretical. A few jurisdictional analyses carried out in accordance with Bill 25.	Strategic infrastructure under Quebec, Canadian or allied control. Proven, replicable architectures. The local and Canadian service offering is robust and scalable.
03. Digital economy	2. Aware	Local SMEs confined to consultancy services or the integration of non-sovereign software. Intellectual property remains foreign and publicly funded code remains closed-source.	Quebec takes ownership of its digital capabilities, retains value and exports. Public procurement stimulates the ecosystem. Publicly funded code is open.
04. Frugal AI	2. Aware	Emerging ethical awareness. Organisational policies prohibit the use of public AI for sensitive data, but there is no modest local alternative. The carbon footprint of data processing is not considered.	Sovereign computing capacity is available, robust and scalable. Quebec becomes a benchmark in ethical AI, prioritising compact, environmentally assessed models and mastering the processing of sensitive data.
05. Skills & Culture	1. Overlooked	Sovereignty is perceived as a purely political concept, rather than a technical one. Employees frequently engage in *shadow IT*, particularly in the field of AI. Quebec's, Canada's and Indigenous peoples' cultural heritage is being 'siphoned off' by foreign AI systems.	A data culture and enhanced skills in digital sovereignty. Shared protection of Quebec, Canadian and Indigenous heritage.
06. Free software & open standards	1. Overlooked	Dominance of proprietary software. Free software is regarded as risky or amateurish. Lack of an inventory of open-source components used indirectly by organisations.	Ability to audit and relocalise one's software stack. State-funded code is redistributed to the community under a free licence. Dependencies inventoried, integration of open standards and the emergence of a strong Quebec-based sector.

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Our 5 recommendations for initiating a virtuous circle



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➔ Prioritise sovereign and cost-effective technological solutions in government procurement policies and the allocation of
allocation of Hydro-Québec’s energy blocks

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2. Assessment of Digital Sovereignty in Quebec

The six strategic areas of digital sovereignty

Areas of transformation in the roadmap

Our assessment is structured around six strategic areas

01. Governance & Data

Making digital sovereignty an enforceable, measurable and legitimate framework. This area establishes common definitions, the reference framework for sovereignty, the conditions for reversibility, enforcement mechanisms and accountability procedures.

02. Infrastructure

Making digital sovereignty practically operational at the infrastructure level: localisation, jurisdiction, operational control, resilience, portability, backup, disaster recovery, connectivity, hardware supply chain and egress capacity, in proportion to workloads and the criticality of the technologies.

03. Digital Economy

Make digital sovereignty a driver for the creation, retention and export of value: public procurement, tax incentives, funding, intellectual property, high-value data, computing capacity, models governable in French and the export of sovereign solutions.

04. Frugal AI

Ensure that the development and use of artificial intelligence follows a path of energy efficiency, effectiveness, accountability and digital sovereignty; reduce dependence on large, oversized models; and support compact, local architectures.

05. Skills & Culture

Develop the skills, practices and institutional capacities necessary for digital sovereignty; protect cultural assets, intellectual property and Indigenous knowledge; strengthen data literacy; preserve Quebec's identity; and support control over digital infrastructure and tools.

06. Free and Open-Source Software and Open Standards

Reduce vendor lock-in and strengthen technological autonomy through free software, open standards and measurable criteria for software sovereignty; shift the 'free versus proprietary' debate towards an assessment of the actual characteristics of control, portability, interoperability, security and reversibility.

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01. Governance & Data

Strategic assessment framework and operational roadmap

Level 2 – Aware

Introduction & project mandate

Establish common definitions, classification, inventory, governance, conditions for reversibility, enforcement mechanisms and accountability procedures.

TARGET: 3–5 years

- Quebec's digital sovereignty is defined within a reference framework, which makes it operational through objective and measurable criteria. This framework is aligned with the Indigenous principles of data governance and sovereignty (PCAP).
- A trusted body manages the framework and accredits external auditors.
- A label is awarded to products and services certified as compliant with the reference framework.
- A public, up-to-date catalogue of labelled solutions is published.
- A dashboard illustrating the transition of public bodies is published.

CURRENT STATUS

- The concept of digital sovereignty has not been defined. There is persistent confusion between the mere residence of data (location) and actual control, as well as 'sovereignty-washing' practised by providers due to the lack of clear definitions.
  The concepts are not aligned with those of Indigenous nations.
- There is no reference framework or governing body responsible for defining the criteria for sovereignty, accrediting external auditors or issuing certification marks.
- There is no certification mark attesting to the sovereignty of digital products or services.
- There is no catalogue of sovereign products and services. Local provision exists but is insufficiently structured on a large scale.

CHALLENGES

- Dependence on foreign quasi-monopolies for digital products and services.
- Risks of business disruption, unforeseen exit costs and price increases suffered as a result of vendor lock-in.
- Lack of a framework defining verifiable criteria for digital sovereignty. No certification scheme or catalogue of digitally sovereign suppliers.
- Limited range of sovereign digital products and services.

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02. Infrastructure

Strategic assessment framework and operational roadmap

Level 2 – Aware

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Introduction & project remit

Making digital sovereignty practically operational at the infrastructure level: localisation, jurisdiction, operational control, resilience, portability, backup, disaster recovery, connectivity, hardware supply chain and egress capacity, in proportion to workloads and the criticality of the technologies.

3–5-YEAR TARGET

- The provision of local and Canadian sovereign infrastructure is robust and scalable.
- New critical projects incorporate an analysis of digital sovereignty requirements from the concept stage onwards.
- Strategic infrastructure is hosted, backed up or replicated under Quebec, Canadian or approved allied control.
- Exit plans are tested regularly for services hosted in non-sovereign infrastructure.
- Reproducible sovereign architectures are being trialled across several sectors.

CURRENT STATUS

- The majority of Quebec organisations' digital infrastructure is entrusted to a handful of major foreign providers (hyperscalers).
- Inventory and understanding of infrastructure assets and subcontractors remain incomplete.
- Dependence on networks, satellites, hardware chains and international connectivity under external control.
- Theoretical reversibility and a lack of actual migration or exit tests for critical workloads.
- Existing local and Canadian capacity, but still insufficiently structured, qualified and mobilised on a large scale.

CHALLENGES

- Dependence on foreign quasi-monopolies for digital products and services.
- Risks of business disruption, unforeseen exit costs and price increases suffered due to vendor lock-in.
- Critical physical dependencies (network, satellite and cables) on foreign entities.

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03. Digital economy

Strategic assessment framework and operational roadmap

Level 2 – Aware

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Introduction & project remit

Making digital sovereignty a driver for the creation, retention and export of value: public procurement, tax incentives, funding, intellectual property, high-value data, computing capacity, governance models in French and the export of sovereign solutions.

3–5-year TARGET

- Québec ceases to be a mere tenant of its digital economy and becomes the owner of a capacity that it controls, retains and exports.
- Public procurement acts as a catalyst for the local market in sovereign products and services . A progress report is published by the government to illustrate the transition of public bodies.
- Sovereign AI models are available.
- Quebec's sovereign offering is becoming a commercial advantage that can be exported internationally.

CURRENT SITUATION

- 90 per cent of investment and $4 billion in public procurement is flowing abroad, favouring leasing at the expense of building local digital capacity.
- Public procurement is not being utilised to act as the lead customer for the Quebec ecosystem. Digital sovereignty criteria are absent from public tenders.
- Access to sovereign AI models is restricted, and energy trade-offs related to digital technology have yet to be properly structured.
- Exports of digital services generate too little economic value.

CHALLENGES

- 90 per cent of the value of digital investments made by organisations in Quebec is captured by foreign *hyperscalers*.
- Public procurement does not act as a catalyst for digital sovereignty and is overly focused on non-sovereign suppliers.
- There is a limited supply of sovereign and energy-efficient AI models.
- Limited exports of digital services from Quebec.

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04. Energy-efficient AI

Strategic assessment framework and operational roadmap

Level 2 – Aware

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Introduction & project mandate

To ensure that the development and use of artificial intelligence follows a path characterised by energy efficiency, responsibility and digital sovereignty ; reduce dependence on large, oversized models; support compact and local architectures, etc.

3–5-YEAR TARGET

- Quebec becomes a benchmark for sovereign, frugal and ethical AI.
- A significant proportion of use cases favour specialised or compact models where appropriate.
- Sovereign AI models are available. Sensitive processing is carried out using sovereign and explainable models that comply with legal and ethical standards.
- Public systems display an environmental assessment.
- Quebec's venture capital sector invests in local tech start-ups.

CURRENT SITUATION

- The existence of sovereign, cost-effective and ethical AI models remains marginal.
- Predominant use of large, oversized generative models that consume vast amounts of energy.
- Dependence on foreign proprietary stacks and infrastructure subject to extraterritorial jurisdictions.
- Lack of measurement and disclosure of the environmental footprint of AI systems.
- High risk of a brain drain and loss of local intellectual property due to a lack of capital.

CHALLENGES

- Pressure on Hydro-Québec's capacity to meet the growing needs of data centres.
- The growing energy, water and material footprint of generative AI models.
- Dependence on foreign quasi-monopolies in the field of generative AI.
- Risk of start-ups and intellectual property leaving the province due to limited venture capital in Quebec.

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05. Skills & Culture

Strategic assessment framework and operational roadmap

Level 1 – Unconsidered

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Introduction & project mandate

To develop the skills, practices and institutional capacities necessary for digital sovereignty; to protect cultural assets, intellectual property and Indigenous knowledge; to strengthen the data culture; to preserve Quebec's identity; and to support control over digital infrastructure and tools.

3–5-YEAR TARGET

- Québec has a shared data culture and a strengthened pool of expertise in digital sovereignty.
- Sovereign generative AI models are trained using content that reflects Quebec, Canadian and Indigenous cultures. They are governed by safeguards that reflect the values of our society.
- Content intended for the public and created by AI is marked with a watermark.

CURRENT SITUATION

- Low awareness amongst Quebecers (leaders and citizens) of issues relating to digital governance and sovereignty, which are still perceived as political and theoretical. Few resources are available in the skills market.
- The foreign AI models in widespread use do not reflect Quebec's values and culture.
- Unregulated harvesting of cultural content by AI systems, without traceability or the authors' consent. Difficulty in distinguishing original content from content created by AI.

CHALLENGES

- Lack of expertise and awareness regarding digital sovereignty.
- Risk of cognitive decline, particularly amongst young people.
- Risk of erosion of cultural identity, languages and local knowledge through the widespread use of generative AI.
- AI systems 'siphoning off' cultural content without consent or remuneration. Difficulty in distinguishing authentic content from content generated or transformed by AI.
- Risk of reduced discoverability of French-language content amidst predominantly English-language content.

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06. Open-source software and open standards

Strategic assessment framework and operational roadmap

Level 1 – Unconsidered

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Introduction & project remit

To reduce vendor lock-in and strengthen technological autonomy through free software, open standards and measurable criteria for software sovereignty; to shift the ‘free versus proprietary’ debate towards an assessment of the actual properties of control, portability, interoperability, security and reversibility.

3–5-YEAR TARGET

- Every public organisation or large enterprise must be able to choose, audit, modify and relocate its software stack.
- New tenders must incorporate open standards and an exit strategy.
- Open-source programme offices help organisations to develop their capacity to use free and open-source software.
- Dependencies on external suppliers are identified and plans to mitigate the risk of non-reversibility are in place.
- State-funded code is open source by default.
- A Quebec-based free software sector is capable of serving the local market and the French-speaking world.

CURRENT SITUATION

- Predominance of proprietary solutions and lock-in by hyperscalers.
- Procurement processes favouring closed-source purchases with no requirement for reversibility.
- Limited presence of Open Source Programme Offices (OSPOs) and dedicated internal specialist units.
- Lack of a centralised inventory of dependencies on sovereign suppliers.
- State-funded software code remains proprietary rather than benefiting the wider community.
- The use of open-source software in large organisations remains marginal.

CHALLENGES

- Dependence on foreign quasi-monopolies for digital products and services.
- Risks of business disruption, unforeseen exit costs and price increases resulting from vendor lock-in.
- State-funded code does not automatically become public.
- Limited availability of sovereign digital products and services.
- Free software is not yet seen as a catalyst for digital sovereignty.
- Concentration of maintenance: an open licence alone does not guarantee autonomy

3. Mapping the challenges

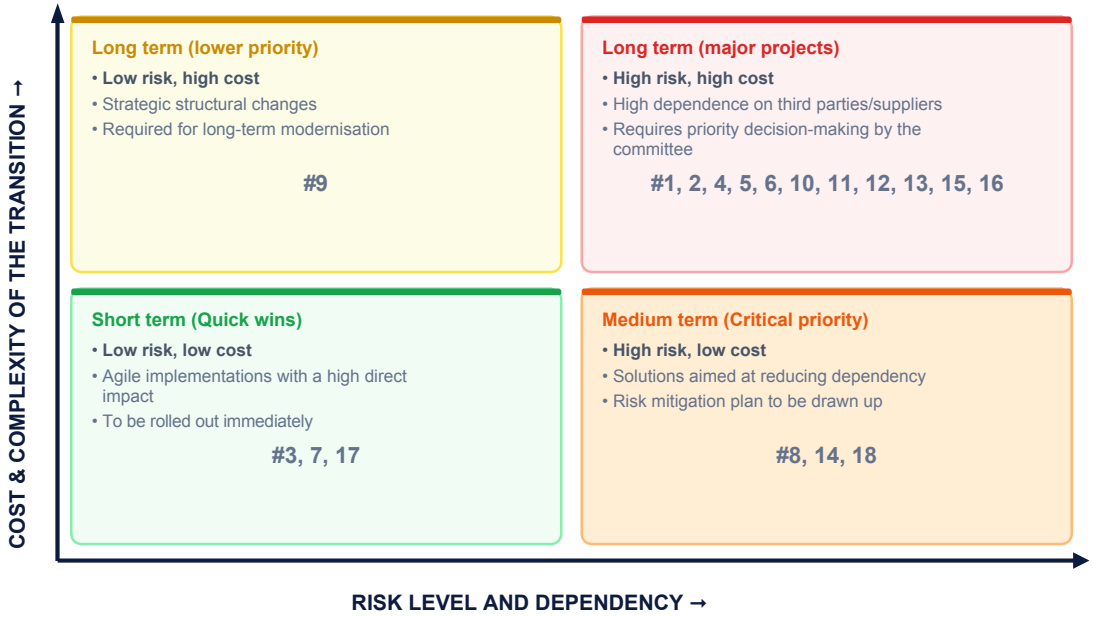
Where to start?

Comparative analysis: Risk & dependency vs. cost & complexity of the transition

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CHALLENGES

1. Dependence on foreign quasi-monopolies for digital products and services. Risks of business disruption, unforeseen exit costs and price increases
2. suffered as a result of vendor lock-in.
3. Lack of a framework defining verifiable criteria for digital sovereignty. No certification scheme or catalogue of digitally sovereign suppliers.
4. Limited supply of sovereign digital products and services.
5. Critical physical dependencies (network, satellite and cables) on foreign entities.
6. 90 per cent of the value of digital investments made by organisations in Quebec is captured by foreign hyperscalers.
7. Public procurement does not act as a catalyst for digital sovereignty and is overly focused on non-sovereign suppliers.
8. Limited availability of sovereign and energy-efficient AI models. Limited exports of Quebec digital services.
9. Pressure on Hydro-Québec's capacity to meet the growing needs of data centres.
10. Growing energy, water and material footprints of generative AI models.
11. Dependence on foreign quasi-monopolies in generative AI. Risk of start-ups and intellectual property leaving the province due to limited venture capital in Quebec.
12. Lack of skills and awareness regarding digital sovereignty.
13. Risk of erosion of cultural identity, languages and local knowledge through the widespread use of generative AI.
14. AI systems 'siphoning off' cultural content without consent or remuneration.
15. Difficulty in distinguishing authentic content from content generated or transformed by AI.
16. State-funded code does not automatically become open source.
17. Free software is not yet perceived as a catalyst for digital sovereignty.
18.



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4. Recommendations

Recommendation [No. 1]: Structure the provision using a reference framework and a quality mark

Action and strategic implementation sheet

Category
Short-term (Quick Wins) and
Medium-term (Critical Priority)

Year of implementation
2027–2030

The Government of Québec should, in consultation with the business community, public organisations and local authorities, work together to establish a rigorous framework for certifying the sovereignty of digital solutions and suppliers.

Sub-recommendations & Actions

Action / Sub-recommendation	Timeframe	Responsible
Frameworks & criteria: reference framework, multi-level model and self-assessment tool. Map the supply chain.	Short term	DSQ in collaboration with the MCN
Governance: recognition by the MCN of DSQ as the official body responsible for managing the framework; with an escalation process and biennial review	Short term	Government of Quebec
Indigenous Nations: Alignment with and respect for Indigenous principles of sovereignty and governance (e.g. PCAP principles)	Short term	DSQ, Indigenous nations, CGIPN
Pilot projects: testing the framework across three organisations (e.g. Crown corporation, large enterprise, government department)	Short term	Pilot projects, MCN, DSQ
Accreditation: definition of certifying bodies and membership processes	Medium term (18 months)	DSQ in collaboration with MCN
Certification & incentives: creation of a label issued by certification bodies and a catalogue of sovereign offers	Medium term (18 months)	DSQ, certification bodies, Government of Québec

Key Performance Indicators (KPIs)

- Percentage of compliance by a service provider with the reference framework
  e.g. target: 90%
- Number of certified service providers listed in the catalogue
  e.g. target: 200 by 2029
- Number of certification bodies
  e.g. target: 3 by 2029
- Number of service providers applying for certification
  e.g. target: 220 by 2028

Key success factors

- **A tested exit strategy** is the most important criterion within the framework. Suppliers must guarantee the absence of vendor lock-in, and organisations must test these reversibility capabilities and quantify them.
- **Clarification of definitions:** sovereignty ≠ mere data residency. Priority must be given to preventing vendor lock-in
- **Criteria for monitoring suppliers' capital**: foreign capital >30% ≠ sovereign
- **Promotion of open source**: promotion of open-source software and open standards in the catalogue
- **Data classification:** to apply the framework, public and private organisations will need to classify their data according to its sensitivity and criticality for the continuity of their operations. Critical and sensitive data must be processed in sovereign digital systems

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Recommendation [No. 2]: Stimulate demand through tax credits

Action and Strategic Implementation Sheet

Category
Medium term – 18 months (Critical priority)

Implementation year
2029–2030

We call on the Government of Québec to introduce a 30 per cent refundable tax credit to incentivise the adoption of sovereign solutions and sovereign suppliers in accordance with the reference framework set out in the first recommendation.

Sub-recommendations & Actions

Action / Sub-recommendation	Timeframe	Responsible
Introduce a 30 per cent degressive refundable tax credit: create a tax incentive based on the solution's certification level (e.g. GOLD, SILVER, BRONZE) issued by an independent auditor in accordance with the DSQ reference framework	Medium term (18 months) A 15-year scheme with degressive 5-year tranches (100 per cent, 70 per cent, 40 per cent) to encourage a rapid transition	Ministry of Finance, Revenu Québec, DSQ, independent auditors

Key Performance Indicators (KPIs)

Amount of tax credits granted
e.g. Target: $125 million in 2028

Key Success Factors

- **Strict certification:** require valid certification and verification of projects by accredited independent auditors, including a tested exit plan.
- **Green incentives:** grant a 'Digital Moderation' bonus of 5 % for systems demonstrating measurable technological and environmental efficiency (see R5)
- **Administrative simplicity**: ensure compliance management through a joint certificate issued by the certification body and Revenu Québec

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Recommendation [No. 3]: Support demand by buying Quebec-made products

Action and Strategic Implementation Sheet

Category
Medium term (Critical priority)

Year of implementation
2029–2030

We call on the Government of Québec to amend its tender criteria to prioritise the procurement of sovereign solutions or services designed to implement sovereign solutions, in particular through the use of open-source software based on open standards.

Sub-recommendations & Actions

Action / Sub-recommendation	Timeframe	Responsible
Amend tender criteria: Update criteria, guides, templates and clauses in accordance with the terms of reference (R1)	Medium term	Quebec Government, public bodies including local authorities
Adopt 'Public money = free and open-source software by default': open publication and mandatory use of a software forge. In AI, prioritise adaptable open-weight models and fund compact architectures	Medium term	Government of Quebec and public bodies, including local authorities
Establish an Open Source Software Office (BLL) within government departments, Crown corporations and large local authorities to manage the software inventory, ensure licence compliance (CRL) and oversee the release of	Medium term	Crown corporations, large local authorities, government departments
Shared expertise units (legal, technical and governance for local authorities, small organisations and SMEs	medium-term	Province, public bodies including local authorities
Promoting and exporting sovereign solutions: integration into trade missions and documentation of public sector success stories	Medium term	MEIE, MRIF
Mandatory exit plan: Require a documented plan for public infrastructure projects (formats, open standards and APIs, export costs, deadlines, responsibilities, destruction of media)	Medium term	MCN, public bodies
Prioritise the allocation of Hydro-Québec energy blocks to stakeholders Medium term digital organisations certified as sovereign and energy-efficient (see R1)		Hydro-Québec and government departments

Key Performance Indicators (KPIs)

- Percentage of public IT procurement awarded to Quebec-based suppliers
  e.g. Target: 20% by 2028, 35% by 3029
- % of publicly funded code published under an open licence on La Forge
  e.g. Target: 100 per cent of publicly funded code on the code repository by 2029
- Percentage of large public organisations with an open-source licence
  e.g. Target: 100 per cent by 2029
- % of exit plans tested in public bodies
  e.g. Target: 20 per cent by 2029
- % of GDP generated by exports of Quebec digital services
  e.g. Target: 10 per cent by 2031
- % of public and cultural organisations that have carried out an inventory of their critical assets and dependencies
  e.g. Target: 100 per cent by 2030

Key success factors

- **Measurement and transparency:** annual publication of simple indicators (e.g. number of sovereign solutions adopted)
- **Testing exit strategies:** conducting simulation exercises to reduce dependence on suppliers
- **SME leverage:** make the government a lead customer and a testing ground for Quebec tech start-ups
- **Demonstrable roll-outs:** Support for concrete and visible use cases in healthcare, education, local government and culture

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Recommendation [No. 4]: Develop a culture of digital sovereignty to support supply and demand

Action and Strategic Implementation Sheet

Category
Short term (Quick Wins) and
Medium term (Critical Priority)

Year of implementation
2027–2030

To preserve our cultural and educational autonomy, Quebec must develop a comprehensive culture of digital sovereignty. This involves adapting public procurement rules, educating society about AI, building shared infrastructure, protecting creative works and structuring our strategic capabilities.

Sub-recommendations & Actions

Action / Sub-recommendation	Timeframe	Responsible
Roll out a digital sovereignty literacy programme, including AI, aimed at decision-makers, managers, creators, teachers and citizens. Adapting learning methods to the AI era. Taking into account the risks of cognitive decline. Raising citizens' awareness of the use of sovereign technologies	Short term	MCC, MEQ, MES, CEGEPs and universities
Create a network of shared infrastructure: establish shared cultural and heritage infrastructure	Medium-term	MCC, MCN, institutions cultural and shared services shared
Require the identification of AI-generated content via watermarks in communications intended for the public	Medium-term	MCC, Canadian Heritage, Copyright , CRTC
Develop a skills framework and attract talent: define a skills framework based on the reference framework (R1). Prioritise strategic IT profiles in immigration and facilitate their settlement; align study programmes and standardise IP transfer agreements between universities and start-ups	Medium-term	MCC, MIFI, MCN, MES, educational institutions

Key Performance Indicators (KPIs) Sheet

Number of people trained in data governance, AI and digital sovereignty
e.g. Target: 200,000 by 2029

Number of professionals identified in the digital sovereignty sector
e.g. Target: 10,000 by 2030

Key success factors

- **Resilience & Human capital:** independence from sole suppliers and the attractiveness of key IT skills
- **Protection and trust:** robust protection of creators, IP and information integrity

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Recommendation [No. 5]: Frugal AI & sovereignty: the Quebec alternative

Action and Strategic Implementation Sheet

Category
Short term (Quick Wins) and
Medium term (Critical Priority)

Year of implementation
2027–2030

Québec and Canada cannot and must not follow the American model when it comes to AI. Given their distinct values regarding governance, data sovereignty and low-carbon development, they must focus their strategy on compact, specialised and environmentally responsible architectures.

Sub-recommendations & Actions

Action / Sub-recommendation	Timeframe	Responsible
Fund eco-responsible and locally-rooted R&D: Support sovereign models and chatbots trained on Quebec-based content in French, whilst respecting intellectual property rights and local realities	Short term	IID / Mila / MCC
Promote open-weight and compact models: in public projects (R3), i.e. small language models and open-weight models that can be adapted locally.	Medium term	MEIE / MCN / Mila / CCTT network, Udem Chair in Energy
Assess the environmental footprint: require the measurement and disclosure of the carbon, energy and water footprints (across the entire life cycle via open standards such as the AI Energy Score) for all public projects	Medium term	MCN / MEIE / OBVIA

Key Performance Indicators (KPIs)

Carbon and energy intensity of public AI systems
e.g. Target: Annual measurement, baseline to be established in line with Quebec's net-zero strategy

Adoption rate of frugal or specialised models
e.g. Target: 25 per cent by 2029

Percentage of public AI contracts awarded to local SMEs/tech start-ups using open-source software
e.g. Target: 25 per cent by 2029

Percentage of public AI systems meeting the level of extraterritorial sovereignty defined by the common framework
e.g. Target: 50 per cent by 2030

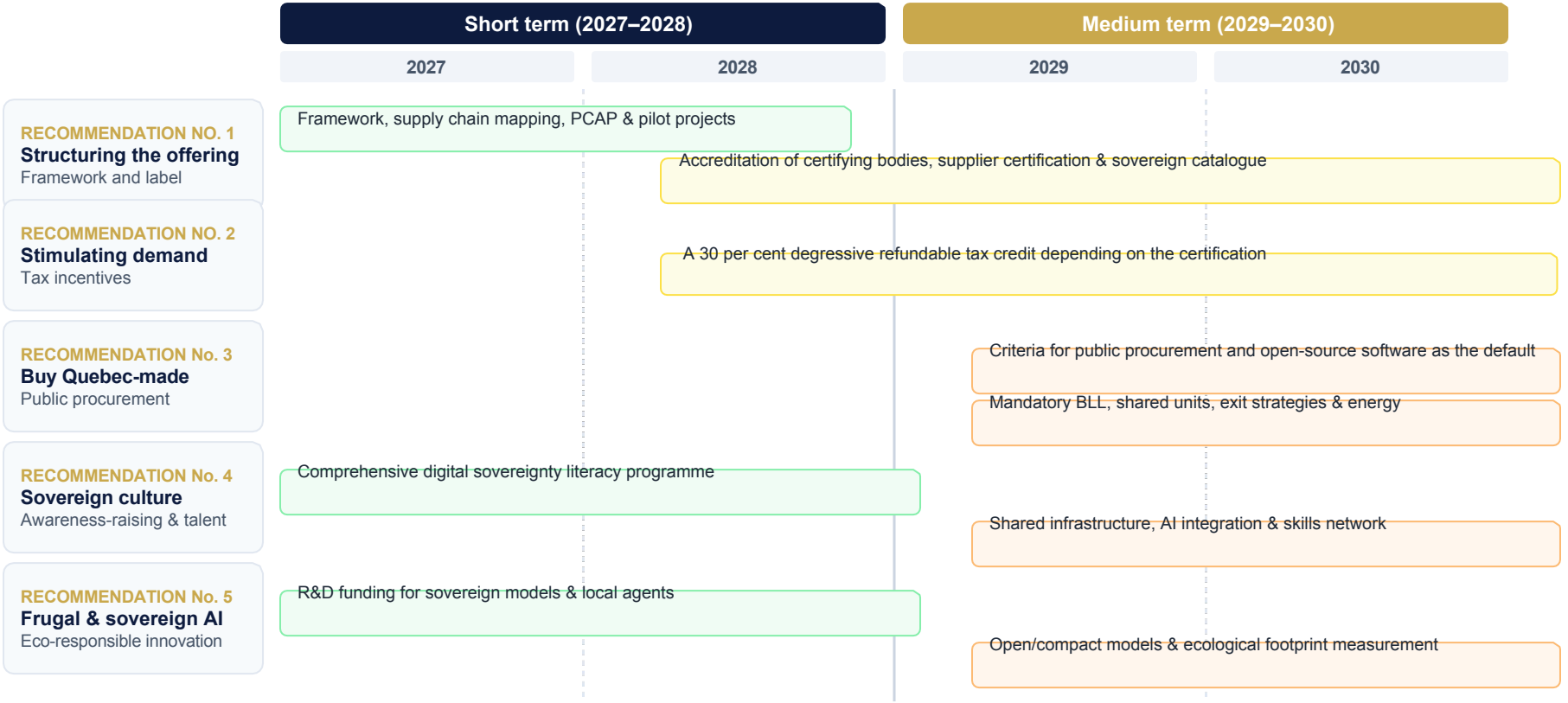
Key success factors

- **Link to R1:** integrating frugal AI into sovereignty criteria
- **Link to R2:** rewarding frugality with an additional tax credit
- **Link to R3 (Public procurement):** making public procurement a driver of growth for Quebec SMEs developing energy-efficient AI
- **Link to R3 (open-source software):** leveraging open-source AI solutions

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5. Roadmap

4 years to initiate this major transformation



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6. Conclusion: promising economic benefits

Let’s buy Quebec products!

DSQ estimates the economic benefits of implementing the roadmap at **CAD 6.8 billion over five years**.

Quebec ICT Market 2024*	**CAD 27 billion**
DSQ assumption: 60 per cent is not sovereign	**CAD 16 billion**
DSQ assumption: 5 per cent repatriated per year	**CAD 810 million** per year
DSQ assumption: economic multiplier effect (x1.7)	**CAD 1.4 billion** per year
Additional GDP in 5 years	**CAD 6.8 billion**

*Source: Quebec Ministry of Economy, Innovation and Energy (Overview of the ICT market)

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Appendices

Discussion points

Points for discussion

Two reviewers believe that the State (e.g. a digital council reporting to the Prime Minister) should maintain the framework to prevent conflicts of interest relating to the certification of DSQ members.

DSQ's Position and Response

DSQ proposes to **create and maintain the framework**, whilst certification is carried out by **independent auditors**.

→ We consider this to be a convergence of interests rather than a conflict of interest.

Examples of professional bodies that maintain their own framework (Canada and beyond):

- **Project Management Institute** (PMBOK)
- **Data Management Association** (DMBOK)
- **ISACA** (COBIT)
- **CPA Canada** (CPA Competency Framework)

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DSQ Maturity Analysis Grid (1/3)

Domain	Level 1 – Not yet considered	Level 2 – Awareness	Level 3 – Standardisation	Level 4 – Implementation	Level 5 – Maturity
01. Governance & Data	Data is transferred to products and services regardless of its classification. Dependence on service providers (often foreign) with no visibility over the subcontracting chain or the applicable extraterritorial laws.	Awareness of legal risks. A few government departments or companies are drawing up a framework to determine which products and services to choose based on data classification, but critical functions remain operated by GAFAM. Only contractual guarantees address issues of sovereignty and reversibility, with no technical guarantees	A reference framework defining digital sovereignty has been formally drawn up. Arbitration mechanisms exist on paper, but lack enforceable measures (enforceability).	Contracts require measurable guarantees of sovereignty, and regular audits are carried out. Initial migrations are taking place to sovereign products and services for the most critical data.	Quebec's digital sovereignty is enforceable, proven and measurable: Control is demonstrated throughout the entire chain; the information assets are classified and reliable; A qualified alternative exists for critical functions; An arbitration and enforcement mechanism is in place; A public dashboard is published; The framework is reviewed periodically and is sufficiently sustainable foundation.
02. Infrastructure	A default cloud-based approach geared exclusively towards foreign hyperscalers for reasons of convenience or immediate cost. No jurisdictional analysis is carried out during the conception of projects.	Hybrid hosting driven by ad hoc security concerns (a few servers maintained on-premises). Exit strategies are non-existent or purely theoretical. A few analyses are carried out as part of the EFVP assessments mandated by Bill 25.	Guidelines on sovereign infrastructure are published. Jurisdictional analysis becomes a systematic step for new projects, going beyond the requirements of Bill 25.	The first large-scale migrations are observed for the most critical data to infrastructure under Quebec or Canadian control. Reversibility is tested on an ad hoc basis. Local and Canadian provision is better qualified and mobilised.	Quebec has a pragmatic and measurable framework for sovereign infrastructure New critical projects incorporate classification, a jurisdictional analysis and an exit plan right from the ideation stage Strategic infrastructure is hosted, backed up or replicated under Quebec, Canadian or approved allied control Reproducible architectures are being tested across several sectors The local and Canadian service offering is robust and scalable.

DSQ assessment of the current situation in Quebec

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DSQ maturity analysis grid (2/3)

Domain	Level 1 – Not considered	Level 2 – Awareness	Level 3 – Standardisation	Level 4 – Implementation	Level 5 – Maturity
03. Digital Economy	Quebec is a technology tenant. Public money is used to fund foreign licences and subscriptions on a massive scale. The local ecosystem is perceived as too small or unsuitable.	A few local SMEs are winning service contracts (integration, consultancy), but the intellectual property rights to the products remain in foreign hands. Publicly funded code remains proprietary.	Public procurement includes clauses promoting local innovation. Pilot projects on sovereign computing are launched and the concept of 'public money = free software' takes shape.	The government is setting aside a significant portion of its digital investments to develop the Quebec ecosystem. High-value public data is being repatriated. Local leaders are beginning to consolidate their positions.	Quebec ceases to be a mere tenant in its digital economy and becomes the owner of a capability that it controls, retains and exports A growing proportion of public procurement fuels the local ecosystem The majority of high-value public data is governed here Publicly funded code is open by default Sovereign computing capacity is accessible Anchor companies are reaching a scale suitable for export, and Quebec's offering of sovereignty is becoming a competitive advantage commercial
04. Frugal AI	Naive and widespread adoption of foreign commercial Large Language Models (LLMs) (black box). Sensitive data is fed into public models (even those under a professional licence).	Initial warnings regarding data privacy and ethics. Organisations prohibit the copying and pasting of sensitive data into public generative AI, but lack a cost-effective local alternative. No awareness of the carbon footprint of data processing.	Establishment of an ethical framework. Use cases begin to focus on smaller, locally hosted models, but environmental assessment is still absent from selection criteria.	Sensitive processing takes place in controlled environments. Tenders are beginning to require environmental impact metrics for AI solutions.	Quebec is becoming a benchmark for sovereign and ethical AI Public systems include an environmental assessment The majority of use cases favour specialised or compact models where appropriate. Sensitive processing is carried out in accordance with enhanced control requirements A significant proportion of public procurement supports Quebec-based companies developing that are sovereign and resource-efficient

DSQ assessment of the current situation in Quebec

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DSQ maturity analysis grid (3/3)

Domain	Level 1 – Unconsidered	Level 2 – Awareness	Level 3 – Standardisation	Level 4 – Implementation	Level 5 – Maturity
05. Skills & Culture	Significant information asymmetry (widespread shadow IT). The organisation is unaware of its technological dependencies or the extent of its assets. Sovereignty is viewed as a political concept, not a technical one.	Isolated technical training. IT teams are beginning to identify critical dependencies, but senior management does not recognise the risks of geopolitical interference or vendor lock-in.	Draft business continuity plans incorporating supplier risk. Roll-out of initial training on data governance, the use of AI and traceability.	A genuine data culture takes root. Critical organisations implement their intellectual property (IP) policies. Expertise begins to be shared between public agencies.	Quebec has a shared data culture and a strengthened pool of expertise in digital sovereignty Critical public and cultural organisations have identified their assets and dependencies, have tested business continuity plans in place, and are applying rules governing the use of AI, intellectual property and the traceability of content. Shared infrastructure and training programmes support the protection of Québec's, Canada's and Indigenous heritage
06. Free and open-source software	Dominance of closed, proprietary software. Free and open-source software is perceived as risky or amateurish. No inventory of open-source components used indirectly.	Passive consumption of open-source software, without contribution. Unregulated use leading to technical debt and security vulnerabilities in overlooked dependencies.	Tolerance and encouragement of open-source software, but an unstructured approach. Some public projects mandate the use of open standards. The first reversibility plans are documented but not binding.	Creation of the first BLLs. The government begins to open-source its code. Tenders strictly require open standards, giving breathing space to Quebec-based open-source software integrators.	Any public organisation or large enterprise must be able to choose, audit, modify and relocate its software stack. State-funded code is open by default. Open-source software organisations (BLLs) structure internal capacity. Dependencies are inventoried, and the reduction in dependencies is measured and published using quantitative indicators. New calls for tenders incorporate open standards and an exit strategy right from the opportunity and business case stages. A Quebec-based free software sector is well-placed to serve the local market and the French-speaking world

DSQ assessment of the current situation in Quebec

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Proposed tax credits

Certification levels (DSQ)

Level	Base rate	Energy Efficiency Bonus*	Total rate
Gold certification	30%	+ 5%	**35%**
SILVER certification	20 per cent	+ 5%	**25**
BRONZE certification	10 per cent	+ 5%	**15**

15-year term (Decreasing sum assured)

Years 1 to 5: **100 per cent**

Years 6 to 10 **70%**

Years 11 to 15 **40 per cent**

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* *5% ‘Digital Moderation’ bonus for systems demonstrating measurable technological and environmental efficiency*

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