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A COMPREHENSIVE REVIEW OF CANADA'S DIGITAL GOVERNMENT INITIATIVES AND LESSONS FROM ABROAD

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Abstract:
Canada's digital transformation within government sectors faces significant challenges, including outdated technologies, limited financial resources, staff resistance, and cybersecurity concerns, which collectively impede the delivery of efficient public services. Despite increasing budget allocations, underutilization and skill shortages continue to slow progress. Comparatively, countries like Australia, South Korea, and Estonia have demonstrated successful digital government initiatives through decisive leadership, citizen-centric service design, robust cybersecurity, and strategic investments in AI and broadband infrastructure. Key success drivers include strong governmental leadership, public-private partnerships, continuous training, and transparent user engagement. Canada's performance measurement relies on key indicators such as service speed, user satisfaction, and cost savings, with notable successes like the Canada Revenue Agency's online tax filing system. However, challenges remain in enhancing internet access in remote areas and strengthening cybersecurity. By learning from international examples and focusing on strategic investments, skill development, and user-centered approaches, Canada can accelerate its digital government transformation to improve service delivery, increase public trust, and achieve operational efficiencies.

Keywords: digital transformation, government services, cybersecurity, public-private partnerships, Canada

1. Introduction

The digital transformation of government services has become a critical priority for countries seeking to enhance operational efficiency, improve citizen engagement, and reduce administrative costs. Canada, despite its advanced economy and technological capabilities, faces substantial challenges in fully realizing the benefits of digital government. Current government sectors maintain legacy technologies that hinder rapid and effective service delivery, compounded by budget limitations and resistance to

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change among public servants concerned about job security. Furthermore, protecting sensitive citizen data against escalating cybersecurity threats remains a pressing concern, as insufficient security measures risk eroding public trust in online services. Recent statistics indicate that only 35% of Canada's federal public services are digitalized, a stark contrast to countries like Estonia and South Korea, which have digitalized over 75% of their services. Budget utilization rates also reveal inefficiencies, with only about 76% of allocated digital transformation funds being spent, highlighting issues related to planning and skill shortages.

Internationally, Australia, South Korea, and Estonia provide valuable lessons in successful digital government implementation. These countries have prioritized human-centered service design, robust identity verification systems, and strategic investments in AI and broadband infrastructure, resulting in streamlined service delivery and heightened user satisfaction. South Korea's leadership in AI funding and Estonia's blockchain-based secure platforms exemplify effective approaches to digital-first governance. Canada's pathway to digital transformation requires adopting similar leadership models, fostering public-private partnerships, and investing in training to build digital competencies within the public sector. By addressing infrastructure gaps, especially in remote regions, and enhancing cybersecurity protocols, Canada can improve service accessibility and build public confidence in digital government services. This paper explores these challenges, international lessons, key success factors, and performance measurement strategies critical to accelerating Canada's digital government transformation.

2. Challenges to Canada's Digital Transformation

Canada's present-day government sectors maintain technologies that result in difficulties in providing quick, efficient service solutions (Government of Canada, 2025). Technological improvement demands substantial financial support and requires significant periods, thus diminishing the pace of progress. Public servants are typically reluctant to adopt operational adaptations because their current procedures taper off, and they fear that technological implementations could reduce job roles (Srivastava *et al.*, 2024). Two substantial challenges exist for computerized programs due to their requirement to protect important citizen data from cyber threats while maintaining complete data privacy. When security measures are insufficient, the public will begin to distrust online services run by the government (Hitlin *et al.*, 2022).

Insufficient financial backing and inadequate staff training hinder digital transformation implementation (Rupeika-Apoga & Petrovska, 2022). Due to periodic budget deficits, new computer system implementation and technology experts make organizational monetary expenses harder to manage. Project progress delays into project failure appear whenever the team lacks sufficiently trained staff. Government services that encounter such problems start to deliver services more slowly, spend more money, and lose features for internet-based operations and information retrieval (Chowdhury *et*

al., 2023). The digital equality between Canada and other member states suffers because the country delays implementing crucial steps towards embracing digital transformation. As per the Digital Government Index (2024), just 35 % of federal public services in Canada are digitalized, with Estonia managing 83 % and South Korea 76 %. This past year, Canada alone had over 2,000 cybersecurity incidents targeted towards public agencies, according to the Canadian Centre for Cyber Security. In 2024, the Treasury Board study discovered that only 55% of the set digital transformation budgets are entirely used by federal agencies. This underutilization of years of experience is symptomatic of a failure to spend, skill shortages, and a better requirement for planning and training (Treasury Board Secretariat, 2024).

Year	Allocated Budget (CAD millions)	Utilized Budget	Utilization Rate (%)
2020	500	320	64%
2021	550	410	75%
2022	600	460	77%
2023	650	500	77%
2024	700	530	76%

3. Lessons from Other Nations

The Australian achievement of e-government development relied on decisive leadership alongside human-centered service delivery initiatives (Australian Government Department of Finance, n.d.). Government policies supported by performance evaluations were created to make services accessible while developing a streamlined system. Users gain safe digital access to online government services using identity schemes that do not require physical office visits. The Australian government placed the citizens at the forefront of its commitment to simplify the task of tax payments and benefit claims (Granger & Sawyer, 2022). Australia mastered methods to tackle regression system problems and opposition to change, resulting in solutions for current Canadian technological hurdles.

Since 2023, Australians' MyGov portal has reached out to over 25 million users, 9 out of 10 of whom found it a positive experience. The system merged over 15 services, including taxes, health, and education (Digital Transformation Agency, 2023).

South Korea collaborates with Estonia through dual approaches to fulfill its online government agenda (Lillemets, 2023). By funding AI technology and broadband construction, South Korea built one of the most developed electronic governmental platforms (Lee *et al.*, 2023). Online government services let citizens obtain services more efficiently, reducing process duration (Al-Besher & Kumar, 2022). Most public services in Estonia became accessible through default online platforms as the country implemented its digital-first approach. Blockchain technology allows Estonia to ensure safe information system storage and confidentiality protection (Semenzin *et al.*, 2022). The Canadian public maintains concerns about secure online services because other countries have created their systems by focusing on reliable digital platforms. Canada can learn

about digital transformation by studying these countries to develop leadership methods while supporting technological maintenance and building digital service acceptance from the general public.

South Korea is ranked 1st in the world according to the UN's E-Government Development Index 2022 and spent USD 2.1 billion in AI public projects between 2020 and 2024 (OECD, 2023). Estonia's e-Residency has issued digital IDs to over 100,000 global Citizens, generating around EUR60 million for state coffers by 2023. South Korea and Estonia are superb examples of how a shift to digital from first can generate real economic advantages (UN Nations, 2022). Their broadband and secure identity infrastructure investments helped to yield fast-track service delivery, boosted public trust, and guaranteed a global reputation as tech leaders.

4. Key Success Drivers for Digital Transformation

Public administration digital transformation attains success through governmental leadership combined with wholehearted dedication. The practical implementation of projects continues forward due to particular objectives and policy decisions that lead to necessary choices that benefit public interests. Establishing organizational measures makes it easier for public services to use new technology while progressing their organizational services (Lee *et al.*, 2023). Ongoing information protection equals vital security measures because users need assurance about private data confidentiality during all touchpoints with digital government services. Implementing digital network security blocks cyberattacks that produce privacy breaches, lowering public trust in systems (Wylde *et al.*, 2022). When governments partner with technology specialists from private businesses, they gain speed in their digital transition efforts (Chen *et al.*, 2021). Through public-private partnerships, beneficial knowledge, financial assistance, and shared resources help boost the quality of digital services (Tolstolesova *et al.*, 2021). The education and training of authorities enable them to perform effectively with current technology while acquiring digital platform experience. Open involvement with people in program development and program accessibility leads to straightforward government digital service usability (Jou *et al.*, 2024). Accessible, user-friendly service platforms increase utilization rates, enhancing government operational efficiency and increasing modernization (Kniazieva *et al.*, 2023).

According to a survey by PwC Canada (2024), employers' training of their public sector employees in regular training resulted in 64% of employees being more confident in using digital tools. Pilot projects in Ontario and British Columbia have found that public-private partnerships cut service delivery efficiency by 17 per cent and processing time by 29 per cent. Training is still a key transition factor. The City of Toronto, during the time it was digitally implementing service dashboards, also saw an increase in user satisfaction, which increased by 31% within a year due to phased training and simplified support functions.

5. Measuring the Success of Digital Technologies in Canada

Canadian public administration uses different assessment methods that specific government departments employ to monitor performance metrics attained with digital technologies. Agencies evaluate performance by assessing user interactions with online services and the time needed to execute their tasks (Morandini *et al.*, 2023). The continuous optimization of operations depends on online program evaluation and regular reporting, which discovers positive and negative aspects across all operations. The performance of digital systems is accurately measured through three leading performance indicators (KPIs): service speed, user satisfaction, and financial savings (Rangan *et al.*, 2023). The speed of the service allows users to complete their government needs efficiently, while satisfied customers demonstrate both user convenience and high service value. The achievement aspect of cost savings appears because physical infrastructure space decreases when operations are executed through online solutions.

The Canadian government shows that its programs can achieve beneficial operational results. The Canada Revenue Agency lets millions of users complete their tax filing through a safe and convenient online procedure (Attard-Frost *et al.*, 2024). The federal government allows citizens to use digital identification to obtain services without requiring physical document presentation as part of their program (Sedlmeir *et al.*, 2021). The government requires improved internet service capabilities in remote regions and security measures to protect personal information through enhanced cybersecurity solutions. Canada's internet efficiency and security issues can be resolved by providing additional technology financing while training government staff to use electronic systems better (Soma & Nuckchady, 2021).

Statistics Canada reports (2023) that the number of contacts with federal services online increased by 48% between 2019 and 2023. The most significant increase was experienced in online tax returns (up 61%), health records (up 39%), and passport renewals (up 57%). An internal report by the Treasury Board of Canada (2024) noted that digitization efforts saved CAD 310m annually in administrative costs of 10 key ministries. These performance indicators are today logged through real-time Key Performance Indicators. For instance, the CRA detects that the MyAccount portal sees over 1.3 million weekly transactions in tax season, with a 93% resolution rate without phone assistance.

6. Conclusion

Canada's journey toward digital government transformation is marked by both significant challenges and promising opportunities. The current limitations posed by outdated technologies, financial constraints, workforce skill gaps, and cybersecurity vulnerabilities impede the swift delivery of efficient online public services. However, as evidenced by international exemplars such as Australia, South Korea, and Estonia, strategic leadership, citizen-focused service design, robust security frameworks, and investment in digital infrastructure are pivotal to successful transformation. Canada's

modest budget utilization and comparatively low digital service penetration underscore the necessity for improved planning, enhanced training programs, and stronger public-private collaborations. By fostering a culture of innovation and openness, the government can mitigate resistance among public servants and encourage adoption of new technologies. Moreover, addressing internet access disparities and reinforcing cybersecurity measures will be essential to building public trust and ensuring equitable service delivery across all regions. The implementation of real-time performance metrics focusing on service speed, user satisfaction, and cost savings provides a framework for continuous improvement and accountability. Ultimately, learning from international best practices and committing to sustained investment in technology and human capital will enable Canada to modernize its public administration effectively, delivering faster, safer, and more accessible government services that meet the evolving needs of its citizens.

Conflict of Interest Statement

The author declares no conflicts of interest.

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