

## Digital Public Assistance: Savings and Efficiency for a Modern Administration

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### ABSTRACT

*In an increasingly digitized world, technology is being adopted by governments across the globe to enhance delivery of services and to make administrative tasks more efficient. The digitalisation of public services is undoubtedly a huge step in the direction of increasing effectiveness and saving resources within the government. With the deployment of modern technologies, public authorities not only can make their services more convenient for citizens but also can save costs and enhance performance. This article introduces the many aspects of the digital public assistance as well as the advantages it offers, its characteristics and how it revolutionizes the modern administrative practice.*

**KEYWORDS:** *digital assistance, efficiency, public institutions, modern administration, public services.*

### 1. Introduction: Understanding Digital Public Assistance

In an era marked by rapid technological advancement, digital public assistance has emerged as a vital mechanism for enhancing social welfare and supporting marginalized communities. This shift towards digital solutions integrates the principles of a knowledge society, where information sharing, and accessibility play crucial roles in economic and social development.

The foundation of digital public assistance lies in effective technology and infrastructure, which are essential for seamless service delivery. As new technologies emerge, such as the Internet of Things (IoT) and Autonomous Internet of Things (A-IoT), they provide innovative avenues for enhanced public services. The integration of various IoT-enabled devices allows for real-time data collection and communication, significantly improving the efficiency of public assistance programs<sup>1</sup>. Moreover, the advent of 5G networks facilitates ultra-low latency connections, which are critical for applications that demand immediate responsiveness. This technological advancement not only enhances user experience but also enables operators to explore new business models, thus expanding their market opportunities<sup>2</sup>. However, it is vital to ensure that these technologies are supported by robust infrastructure, including reliable connectivity and data security measures, to fully realize the potential benefits of digital public assistance.

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<sup>1</sup> O. Vermesan et al. *Internet of robotic things—converging sensing/actuating, hyper connectivity, artificial intelligence and IoT platforms*. In *Cognitive Hyperconnected Digital Transformation*, 2022, pp. 97–155. River Publishers. Doi: 10.1201/9781003337584-4, (PDF) Chapter 4. Available from: <https://www.researchgate.net/publication/384680845> Chapter 4.

<sup>2</sup> M. A. Lema et al., *Business Case and Technology Analysis for 5G Low Latency Applications*, in *IEEE Access*, vol. 5, pp. 5917-5935, 2017, Doi: 10.1109/ACCESS.2017.2685687.



Digital public assistance encompasses a wide array of technological solutions designed to facilitate government interactions with citizens. It includes the implementation of digital platforms, mobile applications, and online services that allow citizens to access information, submit requests, and receive services without the need for traditional in-person visits. This trend is motivated by several key factors:

- **Increased Citizen Expectations.** Modern citizens, accustomed to seamless, user-friendly digital services from the private sector, now expect similar efficiency and accessibility from public institutions. Countries like Estonia have led the way with e-government initiatives, making nearly all public services available online and accessible via digital IDs. As of 2024, 99%<sup>3</sup> of Estonian state services are accessible online, with over 70%<sup>4</sup> of the population actively using these systems, demonstrating the feasibility of creating efficient, citizen-focused digital solutions. Such transformations improve citizen satisfaction while reducing the bureaucratic burden for governments. Furthermore, these systems have been credited with enhancing transparency and accountability, which are key to building public trust in administrations.
- **Cost-Saving Opportunities.** Adopting digital public assistance systems significantly reduces operational costs for governments. For instance, Estonia's investment in digital platforms has allowed it to eliminate 2% of its GDP in annual administrative costs<sup>5</sup>. By transitioning to digital service delivery, processes like tax filings, business registrations, and social benefits applications are automated, reducing the need for manual interventions. These savings can be reallocated to critical areas such as healthcare and education. Additionally, the scalability of digital platforms ensures cost-efficiency even as populations grow or demand for services increases.
- **Focus on Inclusivity.** Digital transformation must prioritize inclusivity to avoid leaving behind marginalized populations. Governments can leverage AI-driven chat bots and multilingual platforms to ensure equitable access to services, even for those with limited digital literacy. Estonia's Bürokratt initiative exemplifies this approach by providing personalized, inclusive public services through AI<sup>6</sup>. Meanwhile, Romania's focus on digitizing tax and business processes reflects broader efforts to include rural and underserved communities in the digital economy. Effective inclusivity strategies not only foster social equity but also maximize citizen participation, which contributes to economic growth.

<sup>3</sup> Information published on the official website: <https://e-estonia.com/solutions/e-governance/e-services-registries/>.

<sup>4</sup> S. Pättsch, *New Estonian law requires administration to make state-owned software publicly available*, online article published on 02.07.2021. Available at: <https://interoperable-europe.ec.europa.eu/collection/open-source-observatory-osor/news/estonia-makes-public-software-public>.

<sup>5</sup> J. Burke, *e-ID saves Estonia 2% of GDP a year. It's time America caught up*, online article published on 07.12.2018. Available at: <https://apolitical.co/solution-articles/en/e-id-in-america>.

<sup>6</sup> R. Dreyling, T. Tammet, I. Pappel, K. McBride, *Navigating the AI Maze: Lessons from Estonia's Bürokratt on Public Sector AI Digital Transformation I*, (June 01, 2024). Available at SSRN: <https://ssrn.com/abstract=4850696> or <http://dx.doi.org/10.2139/ssrn.4850696>.

## 2. Benefits of Digital Public Assistance

Digital public assistance offers numerous advantages for governments as well as citizens. Some of the most notable benefits include: enhanced efficiency, cost reduction, improved accessibility and data-driven decision-making.

One of the most notable advantages is enhanced efficiency. Automated systems streamline processes, reducing the time required to handle requests. For instance, applications for unemployment benefits or social aid can be processed in minutes instead of days. This efficiency allows public servants to focus on higher-value tasks, such as policy innovation and complex problem-solving. Additionally, automation reduces human errors, improving the reliability of service delivery.

Another significant benefit is cost reduction, as digital systems cut operational expenses across the board. By transitioning to paperless systems, governments save on printing, mailing, and storage costs. Automation also optimizes staffing needs, enabling resources to be allocated to areas that require more attention. For example, Estonia's e-governance model has demonstrated considerable savings by digitizing almost all its public services. These savings can be reinvested into other critical areas, such as education or healthcare, to further benefit society.

Improved accessibility is another key advantage of digital public assistance. Digital platforms make government services available 24/7, eliminating the need for citizens to visit physical offices during limited hours. This is particularly beneficial for individuals living in remote areas or those with busy schedules. Moreover, features like translation tools, text-to-speech capabilities, and user-friendly interfaces ensure that services are accessible to diverse populations, including those with disabilities. Mobile apps, for instance, allow people in rural communities to apply for government programs without the burden of long travel distances.

Finally, digital systems enable data-driven decision-making, a game-changer for modern governance. By aggregating and analyzing user data, governments can gain valuable insights into the needs and challenges of different communities. This data can guide policies, allocate resources effectively, and even prevent fraud by identifying irregularities. For example, real-time data analysis can help governments prepare for natural disasters by pinpointing at-risk areas and ensuring timely resource deployment.

Digital public assistance<sup>7</sup> is more than a modernization effort, it is a strategic shift towards a more efficient, accessible, and citizen-focused approach to governance. By embracing these advancements, governments can not only save costs but also foster greater inclusivity and transparency, ensuring services meet the needs of all citizens.

## 3. Key Components of Digital Public Assistance

It is natural for the rapid development of information technologies and the digitalization of social, legal, and economic relationships to leave their mark on legal norms and practical activities

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<sup>7</sup> Voinea, RC., *The Impact of Artificial Intelligence on Public Services in Romania in Academic Journal Of Law And Governance*, no. 11.1-11.2, 2023, pg. 21-31, available on line <https://tppublishing.eu/files/ajlg-n11.1-11.2/3.Camelia-Raluca-VOINEA.pdf>

as well<sup>8</sup>. To effectively implement digital public assistance, several critical components must be taken into account, namely: user-friendly interfaces, robust cybersecurity measures, comprehensive training and feedback mechanisms. Effective implementation of digital public assistance requires careful attention to user experience, security, employee readiness, and responsiveness to public input. When these components are prioritized, digital initiatives can deliver efficient, inclusive, and secure services that meet the needs of all citizens.

To implement digital public assistance effectively, creating user-friendly interfaces is paramount. Digital platforms should be intuitive and accessible to ensure that individuals from diverse backgrounds, including those with limited technical skills, can use them without difficulty. Clear navigation, responsive design, and multilingual support are crucial features that enhance usability. Additionally, integrating accessibility tools, such as screen readers or adjustable font sizes, ensures inclusivity for individuals with disabilities. A platform that prioritizes simplicity and clarity can significantly increase user engagement and trust in digital services.

As digital public assistance expands, robust cybersecurity measures become indispensable. Governments must prioritize the protection of sensitive data, such as personal identification details and financial records, against cyber threats. Implementing strong encryption protocols, two-factor authentication, and regular security audits can mitigate risks. Furthermore, establishing secure data storage systems and incident response plans ensures that breaches, if they occur, are quickly contained and resolved. By maintaining high security standards, governments can safeguard citizen trust and the integrity of public services.

Another critical component is comprehensive training for government employees. Transitioning to digital systems requires staff to understand new technologies and adapt to changes in workflow. Training programs should focus on building digital literacy, enhancing problem-solving skills, and familiarizing employees with platform-specific functionalities. Providing ongoing support and resources, such as troubleshooting guides or dedicated IT assistance, helps staff remain confident and effective in their roles. Well-trained personnel are essential for ensuring seamless service delivery and addressing user concerns promptly.

Finally, incorporating feedback mechanisms is essential for the continuous improvement of digital public assistance platforms. Governments should actively seek input from users to identify pain points and areas for enhancement. Features such as surveys, in-app feedback forms, and customer support channels facilitate this process. By analyzing user feedback, governments can implement targeted updates and ensure that services align with the evolving needs of the public<sup>9</sup>. A feedback-driven approach not only improves service quality but also demonstrates a commitment to citizen-centric governance.

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<sup>8</sup> L. Călin, *Evoluția procedurii audierii prin videoconferință. Consecințe asupra principiilor procesului penal și a respectării drepturilor fundamentale*, in *Revista de Științe Juridice, Supliment 2023*, vol. 44, 2024, pp. 10, ISSN: 1454-3699.

<sup>9</sup> Voinea, R.C., *Digital Performance Analysis of Public Administration: Romania's Ranking in DESI*, in *Revista de Științe Politice. Revue des Sciences Politiques*, no. 81, 2024, pp. 223–234, ISSN: XXXX-XXXX. Available at: [https://cis01.ucv.ro/revistadestiintepolitice/files/numarul81\\_2024/20.pdf](https://cis01.ucv.ro/revistadestiintepolitice/files/numarul81_2024/20.pdf)

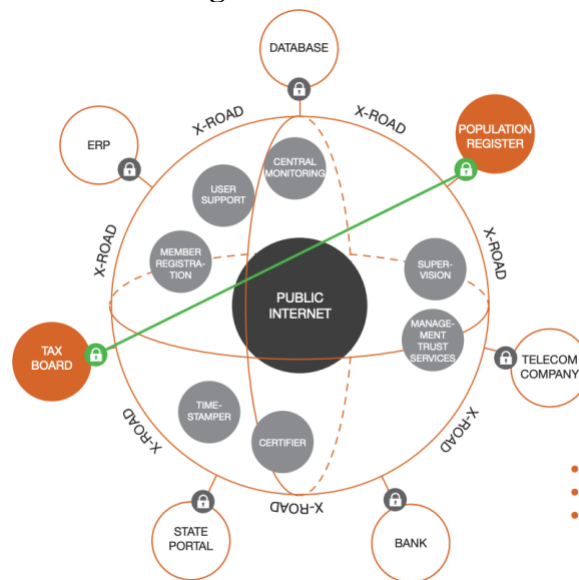
#### 4. Case Studies: Success Stories in Digital Public Assistance

Several countries have successfully implemented digital public assistance, showcasing best practices and lessons learned. Examining success stories in digital public assistance from Estonia, Singapore, and Canada can provide Romania with valuable insights and practical models for enhancing its own systems. In what follows, are a few noteworthy examples that could be applied to Romania's context.

Estonia, known as a pioneer in e-Governance. Estonia has established itself as a trailblazer in digital governance, setting a benchmark for countries worldwide. Through its advanced e-Governance system, the country offers citizens access to 99% of public services online. This comprehensive digital infrastructure allows Estonians to perform a wide range of tasks, from registering businesses and filing taxes to applying for social benefits and even voting, all without leaving their homes. By significantly reducing the need for physical office visits, Estonia has streamlined processes and enhanced convenience for its citizens.

The success of Estonia's e-Governance system lies in its robust digital backbone, known as X-Road, which facilitates secure data exchange between government databases. This interconnected system ensures seamless communication between agencies, eliminating redundancies and enabling real-time data sharing. For example, when a citizen registers a new address, the change is automatically updated across multiple platforms, such as healthcare, education, and tax systems, without requiring additional input.

Figure 1. X-Road



Source: PWC, Estonia - the digital republic secured by blockchain. 2019.

Another critical aspect of Estonia's digital success is its emphasis on security and transparency. Every citizen is provided with a unique digital ID that serves as the gateway to online

services. This ID enables secure authentication and digital signatures, ensuring that personal data remains protected. Furthermore, citizens have the right to monitor who accesses their information through the e-Governance system, promoting trust and accountability in the government.

The impact of Estonia's e-Governance extends beyond individual convenience. It has also resulted in significant cost savings and improved governmental efficiency. By reducing paperwork and automating administrative processes, the country has saved countless hours of labor and resources, which can be redirected toward other critical areas. Additionally, Estonia's digital-first approach has enhanced its resilience; during emergencies, such as the covid-19 pandemic, the country was able to maintain uninterrupted access to essential services<sup>10</sup>. Estonia's achievements in e-Governance demonstrate the transformative potential of digital public assistance. By prioritizing accessibility, security, and innovation, the country has not only improved the quality of life for its citizens but also established a model for modern governance that other nations can emulate.

Through the Smart Nation initiative, Singapore aims to integrate various services into a single digital platform<sup>11</sup>. This initiative represents a bold vision to transform the city-state into a global leader in leveraging technology to enhance the quality of life. At the heart of this initiative is the integration of various public services into a single, user-friendly digital platform. This approach ensures that citizens can easily access essential services such as healthcare, transportation, housing, and education through unified systems. By simplifying processes and reducing redundancies, Singapore has improved both efficiency and citizen satisfaction.

The cornerstone of this initiative is the Smart Nation Platform (SNP), which consolidates data and services into a centralized ecosystem. One example is the "SingPass," a secure national digital identity that allows users to access government services with a single login. From paying taxes and renewing licenses to scheduling medical appointments, SingPass makes interactions with the government seamless and time-efficient.

Data-driven governance is another hallmark of Singapore's Smart Nation vision. Sensors and Internet of Things (IoT) devices are deployed across the city to collect real-time data on traffic, energy usage, public safety, and environmental conditions. This information is analyzed to inform policies and optimize resource allocation. For instance, smart traffic management systems reduce congestion by dynamically adjusting traffic light timings based on real-time vehicle flow. Citizen engagement is a key focus of the initiative. Platforms like "MyResponder" empower individuals to contribute to public safety by providing first-aid assistance in emergencies, while apps like "OneService" allow residents to report municipal issues, such as potholes or damaged streetlights, directly to relevant authorities. These tools not only foster a sense of community but also create a feedback loop that ensures public services are responsive and citizen-centric.

Singapore has also prioritized digital inclusion to ensure that all citizens benefit from the Smart Nation initiative. Programs such as Digital Access for All provide affordable connectivity

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<sup>10</sup> J. Silaškova, M. Takahashi, Estonia built one of the world's most advanced digital societies. During COVID-19, that became a lifeline, online article, World Economic Forum, Jul 1, 2020, Available at: <https://www.weforum.org/stories/2020/07/estonia-advanced-digital-society-here-s-how-that-helped-it-during-covid-19/>

<sup>11</sup> Information published on the official website: <https://www.smartnation.gov.sg/>.



and training to seniors and low-income households, helping bridge the digital divide. This commitment to inclusivity ensures that technological advancements enhance the lives of all residents, not just the digitally adept.

Singapore's Smart Nation initiative exemplifies how technology can be harnessed to create a more efficient, inclusive, and citizen-focused society. By integrating services, utilizing data intelligently, and prioritizing engagement, Singapore has set a global standard for smart governance and urban living in the digital age.

The Government of Canada has embraced a transformative "digital by default" strategy, prioritizing online service delivery to enhance accessibility, efficiency, and transparency. This approach aims to ensure that digital platforms are the primary means of accessing public services, minimizing the reliance on in-person or paper-based processes. By offering streamlined digital services across various departments, Canada is making government interactions faster and more convenient for citizens.

Central to this strategy is the integration of artificial intelligence (AI) into public services. AI-driven tools are being utilized to improve decision-making, automate routine tasks, and deliver personalized user experiences. For example, chat bots powered by AI, such as those used by Service Canada, provide 24/7 assistance, helping citizens with common queries related to employment insurance, pensions, and other benefits. These tools not only improve response times but also free up human resources for more complex tasks.

Canada's digital identity framework is another critical component of the strategy. Through platforms like GCKey and SecureKey, citizens can securely access a wide range of government services with a single login. This centralized approach simplifies interactions with multiple departments, from filing taxes to applying for passports, reducing redundancies and saving time.

The government has also emphasized collaboration and innovation to ensure the success of its digital initiatives. Partnerships with private sector organizations and international digital leaders enable Canada to adopt cutting-edge technologies and best practices. Additionally, agile development practices have been implemented to ensure that digital services are continuously improved based on user feedback and technological advancements.

To address concerns about data security and privacy, Canada has enacted robust cybersecurity measures. These include encryption protocols, secure cloud storage solutions, and strict data governance policies. By prioritizing the protection of personal information, the government aims to build trust among citizens and encourage widespread adoption of digital services. Basically, Canada's "digital by default" strategy represents a forward-thinking approach to governance in the digital age. By integrating AI, enhancing security, and fostering innovation, Canada is redefining public service delivery to meet the evolving needs of its citizens while setting an example for other nations looking to modernize their own systems.

Taking into account the above, we will centralize the most important aspects in the following table.



**Table 1. Best practices from Estonia, Singapore and Canada: lessons for Romania**

Estonia - key initiatives	Lessons for Romania
X-Road Framework: a secure data exchange system that connects different government databases while maintaining privacy and security.	<b>Adopting Interoperable Systems:</b> Romania could implement a secure, interoperable system like X-Road to ensure seamless communication between different government agencies and improve service delivery.
E-Residency Program: a platform that enables global citizens to access Estonian public services remotely.	<b>Inclusive E-Residency Models:</b> such programs could attract international entrepreneurs, boosting Romania's economy and promoting innovation.
Paperless Governance: Estonia's push to eliminate paperwork through digital signatures and online services.	<b>Streamlining Bureaucracy:</b> by reducing dependency on physical documents and encouraging digital signatures, Romania could minimize administrative inefficiencies and enhance accessibility for citizens.
Singapore - key initiatives	Lessons for Romania
MyInfo Platform: a single source of truth for citizen data, used across government services to simplify processes.	<b>Centralized Citizen Data Management:</b> Romania could develop a centralized platform like MyInfo to avoid redundancy, simplify interactions, and enhance citizen experience.
Smart Nation Initiative: a vision to integrate technology in all aspects of life, from healthcare to transportation.	<b>Smart Nation Vision:</b> integrating IoT, AI, and smart technology in urban planning and public infrastructure could help Romania modernize its cities and improve citizens' quality of life.
Proactive Assistance Models: Singapore's government uses AI and data analytics to anticipate citizens' needs and provide services before they are requested.	<b>Proactive Public Assistance:</b> leveraging AI and data analytics to predict and address the needs of citizens (e.g., for welfare or healthcare services) could make Romanian public services more efficient and responsive.
Canada - key initiatives	Lessons for Romania
Service Canada Portal: a one-stop platform for accessing various government services, ensuring simplicity and accessibility.	<b>Unified Access Portals:</b> developing an integrated digital portal could consolidate Romania's public services and improve accessibility for all citizens.
Digital Identity Programs: secure and seamless access to services through unified digital identities.	<b>Digital Inclusion:</b> Romania could prioritize digital training and infrastructure in rural or underserved regions to ensure equitable access to public services.
Indigenous Engagement Programs: leveraging digital tools to bridge the gap for underserved communities.	<b>Engagement with Vulnerable Groups:</b> custom-tailored digital initiatives could address the specific needs of marginalized groups, such as remote communities or economically disadvantaged populations.

*Source: made by the author*



By analyzing and adapting these good practices (lessons), beyond the notable achievements obtained to date in the field of digitalization<sup>12</sup>, Romania can increase efficiency, enhance transparency, promote inclusion, foster economic competitiveness and significantly improve citizens' satisfaction with public services.

## 5. Conclusions

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Digital public assistance is revolutionizing the way governments operate and interact with their citizens. By leveraging technology, public institutions can not only enhance operational efficiency but also provide services that are more accessible and user-friendly. The success of countries like Estonia, Singapore, and Canada serves as a testament to the effectiveness of this approach. As we look ahead, it is imperative for governments to continue innovating and adapting to the digital age, ensuring that public assistance evolves in line with changing societal needs. The journey towards a more efficient and cost-effective administration is not just beneficial, it's essential for a thriving modern society.

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