Transforming Public Governance in Romania Through Digital Tools

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ABSTRACT: This article investigates the transformation of public governance in Romania through the adoption of digital tools, using a mixed methodological approach that combines the analysis of the regulatory framework with the empirical evaluation of the main e-government platforms implemented at national level. The research integrates the documentary analysis of digitalization strategies and policies with a comparative assessment of administrative performance and digital maturity. By applying an analytical framework inspired by digital governance theory and European interoperability models, the article highlights the enabling factors and systemic barriers that influence the modernization of the Romanian administration. The results show that, although technological advances contribute to the efficiency of decision-making processes and the improvement of state-citizen interaction, the persistence of institutional fragmentation and the deficit of digital skills limit the impact of reforms. The article proposes methodological and strategic directions for the continuous evaluation and optimization of digital transformation in the Romanian public sector.

KEYWORDS: digital governance, digitalization, public administration, public policies, digital transformation, e-government

Introduction

Over the past decade, the European economic and geopolitical environment has undergone accelerated transformations, marked by simultaneous processes of digitalization, intensification of global competition and geopolitical developments that influence regional stability. The COVID-19 pandemic has acted as a catalyst for administrative modernization, increasing the pressure on states to provide fast, accessible and resilient public services. In parallel, geopolitical tensions in the proximity of the European Union borders, together with the challenges associated with cybersecurity, have amplified the need to strengthen digital infrastructures and institutional capacity. In this context, Romania is in a complex process of

adaptation to the new demands of economic competitiveness and European integration, in which the digitalization of public administration becomes a strategic vector for the modernization of governance. Investments supported by European instruments, such as the Recovery and Resilience Mechanism, create a favorable framework for the development of interoperable digital systems, oriented towards efficiency and transparency. However, the pace of implementation and the coherence of reforms remain directly influenced by the internal economic dynamics, the administrative capacity and the pressures generated by a volatile geopolitical climate. Currently, e-government is in an advanced phase, characterized by transactional and integrated e-government. This involves the provision of complete public services online, including payment of taxes, issuance of certificates and management of complex administrative processes through interoperable platforms. In addition, the use of data analysis, artificial intelligence and decision support systems allows public administration to become more proactive, anticipate citizens' needs and optimize internal processes.

The evolution of e-government can be conceptualized as a gradual process of digital transformation of the public sector, structured in several distinct stages, as can be seen from the chapter "Digital Public Services", where Springer mentions an e-government maturity model (Layne & Lee's model), often cited in the specialized literature, which explains four stages of development: cataloguing, transaction, vertical integration and horizontal integration. The first stage, specific to the 1970s–1980s, was marked by internal digitalization, mainly oriented towards increasing administrative efficiency through process automation and the use of information technologies for operational support.

In the 1990s, public administrations moved towards an informational e-government phase, characterized by the online availability of official information and the development of platforms that facilitated citizens' access to guides, forms and institutional resources. Starting with the 2000s, e-government entered an interactive stage, in which the first two-way digital services appeared, allowing direct communication between citizens and institutions and, implicitly, civic participation in the online environment. The contemporary stage, developed from the 2010s to the present, is defined by the transition to full transactional services and integrated systems, characterized by interoperability, extensive use of data and the orientation of public services around the needs of the citizen. This evolution reflects the progressive maturation of e-government and the consolidation of its role in the modernization of public administration.

Global trends in e-government

Globally, governments have significantly accelerated the digitalization of public services, and the 2024 edition of the United Nations (UN) global report assessing how governments around the world are using digital technology to deliver public services, titled "UN E-Government Survey," highlights several major trends. First,

scalable digital infrastructure and the adoption of emerging technologies – such as artificial intelligence, automation and modular code – are increasingly common in government strategies (OECD, 2024). Governments around the world are transforming public services through innovative approaches that put people at the center of design and delivery, and the report analyzes nearly 800 case studies from 83 countries and identifies five critical trends in government innovation that are reshaping public services. It finds that governments are collaborating with stakeholders to co-design solutions and anticipate future needs so they can create resilient and sustainable public services, while investing in scalable digital infrastructure, experimenting with emerging technologies (automation, artificial intelligence and modular code), and expanding innovative and digital skills to make public services more efficient. Moreover, governments are making public services more personalized and proactive to better meet people's needs and expectations and reduce psychological costs and administrative friction, and are proving to rely on traditional and non-traditional data sources to guide the design and execution of public services.

Last but not least, governments see public services as opportunities and ways for citizens to exercise civic engagement and hold governments accountable for upholding democratic values. So, another essential aspect is citizen engagement so that digital services become a channel not only for delivery but also for civic participation, strengthening transparency and trust in institutions. According to the aforementioned UN report, the global average of the e-Government Development Index (EGDI) has increased, demonstrating steady progress worldwide.

From the perspective of the importance of public services, they are the main point of contact between government and citizens, businesses and organizations and are one of the factors that determine trust in public institutions, improving reliability and responsiveness. The quality of public services has a profound impact on people's lives and is often essential in ensuring citizens' access to opportunities. To earn trust and effectively respond to people's ever-changing needs, public services must continuously innovate ways to deliver value and improve lives.

In parallel, there is a strong movement towards proactive and personalized public services that results in governments no longer waiting for citizens to come to the authorities, but rather anticipating needs and interacting accordingly (OECD, Global Trends in Government Innovation, 2024). Traditional and non-traditional data are also used to inform public decisions, leading to "data-powered" governance and greater flexibility in adapting to complex contexts.

National trends in e-government

As for Romania, the UN Public Administration Knowledge Base indicates that the country has an EGDI score of approximately 0.7636 in some editions, placing it in the category of countries with a relatively high level of e-government

development. Although Romania has made progress, its position in international rankings remains fluctuating and compared to countries that are advanced in terms of digital governance (such as Estonia), Romania has not yet reached the same level (Vevera & Vasiloiu, 2024).

The process of digitalization of public administration in Romania has its roots in the first two decades of the post-communist transition, but it only took on strategic shape after 2000, in the context of preparations for accession to the European Union. During this period, the Romanian state launched a series of fundamental e-government projects, aimed at modernizing the digital infrastructure, increasing institutional transparency and facilitating the relationship between citizens, the private sector and the administration. From a brief analysis of them, we realize that they created the institutional framework necessary for the accelerated transformations of the last decade, even if they have registered different levels of success. Thus,

1. The National Electronic System (SEN), launched in the early 2000s, represented one of the first attempts by the Romanian state to introduce a unitary architecture for the provision of online public services. The platform allowed centralized access to information, forms and procedures of various institutions. Although its use remained limited, SEN had a structural importance: it introduced the idea of a unified government portal and offered the administration the first tools for standardizing digital interactions.

2. The Electronic Public Procurement System (SEAP), later known as e-Tendering, is one of the most solid and sustainable projects of the initial period. Implemented in the legislative and technological environment of 2002–2006, SEAP aimed to increase transparency in public procurement, reduce bureaucracy and align with European competition rules. Over time, the platform became mandatory for all public institutions, contributing to the professionalization of the procurement process and increasing the level of visibility over the spending of public funds. Its sustainability and expansion make this project one of the early examples of success in Romanian e-government.

3. E-Tax and electronic tax return filing platforms. Before the emergence of the Virtual Private Space, ANAF developed several electronic services for online tax return filing, designed to eliminate the dependence on the physical format and reduce operational costs. The introduction of mandatory online filing for certain returns - a radical step for that time - created the premises for a more efficient digital relationship between taxpayers and the tax administration. These initiatives formed the basis for the subsequent modernization of ANAF, culminating in the development of the Virtual Private Space after 2014.

4. Health Care Information System (SIUI). Although oriented more towards the internal management of the health system, SIUI was one of the largest public IT projects from 2005–2010. It introduced for the first time on a national scale a unified mechanism for verifying the quality of the insured, validating

medical services and electronic reporting. Its impact on digitalization was not only technical, but also organizational: the implementation of SIUI forced public health institutions to restructure their internal flows and data management.

5. The e-Romania portal, launched as an ambitious initiative around the 2010s, was one of the most well-known conceptual e-government projects, designed to become a single point of access to digital government services. Despite its visibility and the considerable funds allocated, the project had limited implementation and did not achieve its initial objectives. However, from an analytical perspective, e-Romania is relevant because it highlighted the need for strategic coherence, institutional coordination and unitary interoperability standards - themes that resurfaced in subsequent strategies.

6. Ghișeul.ro (National Electronic Payment System-SNEP), officially launched in 2011, became the first public platform through which citizens could pay local taxes and fees online. The project marked the transition from internal computerization of institutions to services directly oriented to citizens. Although institutional adoption was initially slow, the platform demonstrated the effectiveness of digital solutions in reducing interaction at the counter and increasing fiscal transparency, which inspired the subsequent expansion of electronic services in local administration.

In retrospect, these projects can be interpreted as successive phases of a maturing process structured as follows:

- 2000–2006: development of the initial digital infrastructure and fundamental platforms (through SEN, SEAP);
- 2006–2011: expansion of administrative capacity and emergence of major sectoral projects (through SIUI, e-Tax);
- 2011–2015: orientation towards direct digital services to the citizen (Ghișeul.ro), but also ambitious attempts with difficult implementation (e-Romania).

Although many of these initiatives had technical or institutional limitations, they provided the Romanian administration with the first elements of digital experience, the framework for standardization, and the basis for the massive investments made after 2015 in interoperability, government cloud, digital identity, and integrated online services.

Following these developments, in the post-2015 period, the digitalization of public administration in Romania entered a phase of consolidation and expansion, characterized not only by the introduction of new digital services, but also by institutional and strategic reforms aimed at streamlining processes and reducing bureaucracy. This stage reflects both Romania's commitment to the European Union's objectives in digital governance, as well as the internal need to increase administrative efficiency and transparency. In this regard, we exemplify:

1. Government cloud and integrated digital infrastructure. The Authority for the Digitalization of Romania (ADR, n.d.) has initiated the implementation of a

government private cloud, a central project within PNRR-Component 7, which aims to become the basic infrastructure for all government applications. This infrastructure allows interoperability between institutions and ensures a high level of security, scalability and operational continuity. In parallel, Software as a Service (SaaS) platforms and digital services for administration are gradually integrated into this ecosystem, facilitating a common back-office for public institutions and creating the premises for efficient digital governance.

2. The Single Digital Portal of Romania (PDURo) whose launch represented a major step towards the centralization of online public services. It functions as a single point of access for citizens, offering standardized and fast digital interactions with state institutions. The integration of the portal with the government cloud allows the exchange of data between different authorities and supports the "100% online" services strategy. Through PDURo, the Romanian administration aligns itself with international trends in citizen-oriented e-government, emphasizing efficiency, transparency and accessibility.

3. Digital identity and electronic identity card. Another central element of the digital reform is the development of citizens' digital identity. The implementation of electronic identity cards (e-ID) and the digital wallet (ROeID) aims to create a secure authentication mechanism in relation to digital public services. This initiative not only simplifies access to services, but also allows the integration of personal data into an interoperable system, reducing redundancies and the risk of administrative errors.

4. Digital training programs for SMEs. In parallel with the digitalization of the administration, Romania has invested in the development of digital skills of the business environment. Through the project "Advanced Technology Skills for SMEs", company employees benefit from online training in areas such as cloud, artificial intelligence or Internet of Things. This integrated approach between the public and private sectors contributes to increasing competitiveness and the rapid adoption of digital technologies.

5. Single industrial license. Among the most ambitious digitalization and simplification projects is the single industrial license (LIU), regulated by OUG 140/2022. This initiative involves centralizing all authorizations and approvals required for industrial activities in a single administrative act, issued through a Single Electronic Contact Point (PCUEL). The system follows the "once-only" principle: the data provided by the company is automatically taken over by all institutions involved, eliminating document redundancy and reducing authorization time. In addition, the procedure provides for standardized deadlines and tacit approval in case of failure to comply with them by the authorities, which ensures predictability and transparency.

The LIU project is not only a digital simplification, but also an institutional reform because it involves the coordination of several authorities and the adjustment of internal legislation and procedures to allow the functioning of the

single license. Although full implementation is still underway, this project is considered a strategic milestone for the modernization of public governance and a clear example of the integration of digital technology in the decision-making and administrative process.

The analysis of these examples highlights two defining features of recent digitalization in Romania: first, the integration of digital infrastructures and platforms (government cloud, single portal, digital identity), which facilitate interoperability and standardized digital services, and second, the reform of administrative processes (single industrial license, simplification of authorizations), which radically transform the way the state interacts with citizens and the business environment. Together, these initiatives represent Romania's transition from fragmented informatization to a coherent digital governance, oriented towards efficiency, transparency and user-centered services.

Transformations of public governance in Romania

The process of digitalization of public administration in Romania has generated, in the last two decades, a series of structural transformations that reflect the gradual transition from traditional governance models to advanced forms of e-government and smart governance. These changes are the result of both the stages of digital maturation identified at international level, as well as of national digital transformation projects implemented within the framework of public strategies and European funding. A first direction of transformation aims at the integration and interoperability of digital infrastructures of public administration. Major projects, such as the development of the government cloud, currently in an accelerated implementation process, have the role of ensuring the interconnection of the IT systems of public institutions and creating the premises for the application of the "once-only" principle. In this context, the electronic exchange of data between institutions becomes an essential tool for reducing bureaucracy and streamlining administrative processes, contributing to the shaping of a state oriented towards integrated and accessible services.

A second relevant transformation is the increase in the accessibility of public services for citizens, with the consolidation of digital government platforms. Centralized authentication and digital identity systems simplify citizens' interaction with public administration. The expansion of online services - from electronic payments to the issuance of documents and access to personal files - reduces dependence on physical counters and contributes to the standardization and transparency of administrative procedures.

In parallel, digitalization has stimulated increased transparency, civic participation, and institutional accountability. This facilitates the strengthening of trust between the administration and citizens and contributes to more accountable governance.

Another important dimension of the transformation is the institutional modernization driven by national digital strategies. The adoption of public policy documents with a 10-year horizon, as well as the alignment with the European Commission's recommendations on digital transformation, demonstrates a paradigm shift: moving from fragmented projects to strategic, multi-sectoral approaches. These initiatives are complemented by investments in the training of civil servants' digital skills and in strengthening institutional capacity, crucial elements for the sustainability of digital transformation.

Overall, the aforementioned transformations highlight that public governance in Romania is in a process of profound recalibration, driven by the pressures of digital modernization and the need to align with European and global standards. While significant challenges remain related to interoperability, cybersecurity, institutional coordination, and digital skills, the general direction indicates clear progress towards a governance model focused on digital services, open data, and expanded civic participation.

Research methods and tools

The analysis carried out in this article is based on a combination of qualitative methods, specific to research in the field of public administration and digital policies. First, documentary analysis was used, by examining the relevant strategic and normative framework, including government programs, national digitalization strategies, reports of European institutions, as well as specialized studies. This method allowed the identification of the evolutionary stages of e-government and the projects implemented in Romania in the last two decades.

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The research also integrated comparative analysis, used to correlate national developments with international models of e-government maturity, highlighting the convergences and particularities of the Romanian context. In some sections, secondary indicators (such as the UN e-Government Development Index, data on digital infrastructure or digital skills) were used, which provided an empirical framework complementary to the qualitative interpretation.

Together, these methods and tools allowed for an integrated assessment, both descriptive and interpretative-critical, of the recent transformations of public governance in Romania in the context of digitalization.

Conclusions

The analysis of the evolution of the digitalization of public administration in Romania highlights a path characterized by successive phases of development, in which early initiatives created the foundation for more complex and integrated reforms today. During the period 2000–2015, projects such as the National Electronic System (SEN), SEAP, SIUI, e-Tax and Ghișeul.ro introduced digital tools that standardized processes, partially reduced bureaucracy and familiarized the administration with operating in digital environments. Although some initiatives, such as the e-Romania portal, did not achieve all the proposed objectives, they provided valuable lessons regarding institutional coordination, interoperability and the need for a coherent strategy.

The post-2015 period marks the transition towards a coherent digital governance, oriented both towards the internal efficiency of institutions and towards the user experience. Recent initiatives - the government cloud, the Single Digital Portal, the digital identity and ROeID, the digital training programmes for SMEs and, last but not least, the single industrial licence - illustrate the integrated approach that combines technological infrastructure, procedural reforms and the accessibility of digital services. This integration reflects international trends in e-government: digitalisation is no longer just a tool for efficiency, but a strategic vector of administrative reform and economic development.

Looking ahead, Romania's prospects in terms of digitalization are shaped around several key directions:

1. Interoperability and standardization: for digital services to be truly effective, it is necessary to implement uniform standards at national level, so that data and information flows can flow without obstacles between institutions.

2. Extending digital services to citizens and businesses: projects such as the single industrial license demonstrate the impact of reforms that simplify complex processes and reduce administrative time and costs.

3. Security and data protection: extensive digitalization involves cyber risks and issues related to the protection of personal data, which makes it necessary to develop a secure architecture and robust digital governance policies.

4. Digital culture and skills of public employees: the success of digital projects depends on the ability of administrative staff to use new tools, but also on the willingness to adapt procedures and institutional mentality to digitalization.

5. Continuous evaluation and adjustment: to maintain the relevance and effectiveness of reforms, it is necessary to constantly monitor the implementation of projects and adapt them to the changing economic, social and technological context.

Overall, the evolution of digitalization in Romania can be interpreted as a gradual maturation process: from pilot projects and fragmented initiatives, to an integrated digital governance, oriented towards efficient, transparent and accessible services. The single industrial license, together with the cloud infrastructure, the single portal and the digital identity, are clear examples of this path and indicate the strategic direction for the future: the consolidation of public administration as a digitized, interoperable and citizen-oriented system and the economic environment.

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