



The Role of Digital Transformation in Modernizing Local Administration in Algeria

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ABSTRACT

For several decades, the world has been experiencing a massive technological revolution driven by developments in information and communication technologies. Human beings have increasingly come to rely on technology in all aspects of their daily lives, due to the numerous advantages and benefits it offers, which have enhanced its importance within society. In this context, most countries around the world have moved toward integrating and incorporating modern technology into their various economic, social, political, administrative, and organizational interventions. Administration, in particular, represents the apparatus through which the state implements its policies across all sectors, serving as a functional extension of the state itself. The Algerian government has not remained outside this technological momentum and its applications across different ministerial sectors, including the Ministry of Interior, Local Authorities, and Transport.

Digital transformation in local administration constitutes a fundamental factor in enabling local communities to transition toward an operational model based on digital technologies for modernizing their functions, delivering services, and improving their quality. It represents a shift from a traditional bureaucratic environment to a modern environment centered on digitization. Achieving this objective is primarily linked to the availability of adequate digital capabilities. However, the path toward digital transformation within local communities faces several challenges—human, administrative, financial, technological, and others—especially in light of the necessity to adapt to global developments and openness within a strategic framework of cooperation with various partners and stakeholders interacting with different levels of the administrative sector.

Keywords: Digital transformation, Local administration, Local communities, Digital tools.

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INTRODUCTION

Digital transformation has become a necessity for all institutions and sectors seeking to modernize their functions in order to facilitate access to services for users, particularly local administration within local communities. Digital transformation does not merely mean the application of technology within administration; rather, it represents a comprehensive program that also reshapes the way public services are delivered, making them easier and faster.

In light of the major challenges facing the world in the twenty-first century and with the aim of improving the relationship between users and the administration, decision-makers in the Algerian government have developed a series of programs, plans, and national strategies to digitize administrative work and enhance its quality and accuracy within a strategic digital vision ¹.

Despite the multiple efforts undertaken by the Algerian government to address changes and respond to the needs of users and civil society, local administration remains at the early stages of adapting to the digital environment due to economic and social transformations, as well as several structural challenges such as bureaucracy, centralization, insufficient human resources, slow and complex procedures, and lack of communication ².

Accordingly, digital transformation at the level of local communities significantly reduces costs and effort, improves operational efficiency, and organizes administrative processes. It also enhances service quality and simplifies procedures for obtaining public services, while creating opportunities to provide innovative and creative services beyond traditional methods. This, in turn, contributes to generating satisfaction and acceptance among service users.

The absence of a digital dimension in the management of local administration has had negative effects on the effectiveness of legal, regulatory, and procedural frameworks in meeting the needs of residents and beneficiaries of national and local public services, mainly due to cumbersome procedures and the failure to align with various digital programs and strategies adopted in Algeria—particularly before 2021, when digital transformation was imposed as a strategic priority by the President and considered a national objective to be achieved by all ministerial departments at different levels.

Within this framework, digital transition workshops were launched within local administration, given that local communities represent the state's closest interface with citizens in their daily interactions. The aim was to improve administrative services provided to citizens, in line with constitutional principles—especially the 2020 constitutional amendment—which enshrines human rights such as the right to access information and the right to benefit from public services.

Starting from the hypothesis that digital transformation can play a role in modernizing local administration and improving its performance through the tools and technologies available to achieve digital transition within local communities, it is also acknowledged that several challenges hinder the path toward digital transformation. These challenges can be overcome through the adoption of best digital practices. The following questions arise: **What are the mechanisms for digitizing human and financial management in local administration? What tools are used to digitize local services for users? What are the main challenges that obstruct the transition from a traditional model to comprehensive digital transformation in managing local community functions? How can best digital practices be adopted as an approach to overcome these constraints?**

Based on the foregoing, the central research problem can be formulated as follows: **To what extent has digital transformation contributed to modernizing the administration of local communities and improving their services? And what are the areas of interaction between local administration and digital space applications?**

The digital transformation strategy aims to digitize the activities of local communities, including budgeting, expenditures, taxation, human resources, civil status, property management, litigation, and the monitoring of development projects implemented within the framework of public procurement contracts and public service delegations. The objective is to improve the quality of services provided to citizens and enhance the business climate for enterprises. The digital transition process has been embodied through the establishment of several national digital platforms. It is also worth referring to the French experience as a pioneer in digital transformation, where a digital transformation program was launched on May 31, 2021, for a period of three years. This program represents a new framework for cooperation between the French government and local administrations in the field of digital governance ³, replacing the previous local digital administration development program, which aimed to establish shared information systems among local administrations and ensure coordination between the state and local authorities in digital transformation efforts ⁴.

Thus, the mechanisms and tools adopted to modernize local administration in Algeria will be examined in this section.

Section One: Mechanisms and Means of Digitizing the Activities of Local Administration in Algeria

The modernization of local administration functions through digital transformation represents one of the main approaches to enabling local communities to keep pace with the various developments occurring within society. The construction and consolidation of the state cannot be achieved without the presence of a modern administration as a fundamental foundation and a key determinant for achieving comprehensive development. Local administration constitutes one of the essential pillars of the modern state, as it reflects sovereignty and serves as a mechanism for implementing public policies and government programs, in addition to ensuring the proper functioning of public services.

The importance of this research lies in understanding the role of digital transformation in modernizing local administration and determining how local communities can benefit from digital transformation to enhance their administrative functions. Territorial communities need digital transformation in order to improve performance efficiency, enhance service quality, and reduce administrative costs. This approach enables them to overcome contemporary challenges, which require the use of modern technology.

The objectives of this study are to identify the legal framework governing digital transformation within local communities, examine the tools and technologies available to achieve digital transformation and assess their effectiveness, analyze the potential challenges involved in modernizing local administration through digital transformation, and finally determine the necessary measures to successfully implement digital transformation in local communities.

Local communities have experienced developments in the modernization of their administrative work through a series of procedures and mechanisms aimed at enhancing the effectiveness of their assigned missions, notably by adopting digitization as a strategic entry point for efficient and successful management. Given their broad competencies, local public services have undergone transformation in terms of human resource management and capacity-building within local administration. This is particularly evident in civil status services, which now function as electronic platforms in daily interaction with citizens, generating noticeable satisfaction among beneficiaries. Furthermore, financial management has been strengthened to increase revenues and rationalize expenditures, leading local administrative services at both the municipal and wilaya levels⁵ to digitize various aspects related to public services provided to users⁶.

First Requirement: Means of Digitizing Human and Financial Management Services in Algerian Local Administration

In application of the principle of local autonomy, local communities rely on their human resources to carry out various administrative and financial functions. Therefore, digitizing these services constitutes a key entry point for developing local public administration, through integration into electronic administration systems and applications and the modernization of their operational requirements.

Regarding financial operations, these have been connected to financial systems within the Ministry of Interior, Local Authorities, and Transport, in a horizontal relationship with other financial administrations through electronic networks, particularly with local tax directorates. Given the importance of sound financial management of local communities, various operations related to the management of revenues and expenditures have been integrated into digital systems.

Second Requirement: Digital Management of Human Resources in Local Administration

Human resources represent an extension of legal mechanisms, as the practical implementation of administrative action is carried out by public officials. Local communities are no exception, as they employ a large number of staff who assist elected council presidents in performing their duties⁷.

Human resources within local communities are managed through the "Indimaj" technological integration system, which is a management system dedicated primarily to authorizing officers and employees. Through this system, local employees can access updates regarding their professional careers and administrative status, as well as obtain various certificates and administrative documents. This contributes to reducing

challenges faced by human resources at the local level and enhances job security within local administration.

For the administration—represented by the authorizing officer or their delegate—the “Indimaj” portal allows the updating of employee-related data tables, preparation, signing, and transmission of documents and reports. The portal also provides budget forecast data, salary programming for employees, and the overall expenditure status of territorial communities in both operational and investment sections.

The importance of information systems became particularly evident during the COVID-19 pandemic in 2019. In this context, the Algerian government introduced an urgent regulatory measure requiring the replacement of physical and direct interactions between administrations and citizens under the slogan “zero paper.” This initiative aimed to reduce paper-based document exchanges and limit in-person visits by employees responsible for submitting and withdrawing documents, through the digitization of documents and records.

Third Requirement: Means of Digitizing Financial Management in Local Administration

Given the developmental importance of financial management and the financial autonomy and transparency of local communities, several information systems have been established to manage revenue and expenditure operations. Budget programming—both initial and supplementary—has been integrated into the Integrated Expenditure and Revenue Management System. Local communities are required to adopt this system at all stages of budget preparation and to record all expenditures related to local administration⁸, while ensuring transparency in public spending.

This system enhances administrative governance and financial governance, particularly in public expenditure management, through the effective use of new information and communication technologies. It improves public spending management in terms of credibility, speed, and efficiency.

In parallel with the digitization of budget management and the dematerialization of procedures, all budget programming operations have been incorporated into the integrated expenditure management platform⁹. The Ministry of Interior, Local Authorities, and Transport has mandated the use of intelligent and efficient systems for these operations throughout all stages of budget preparation and approval.

Concerning local revenue operations—both internal and external—such as rental income and revenues from public facilities (wholesale markets, slaughterhouses, etc.), these are managed through the Integrated Revenue and Tax Management System. This system modernizes revenue management methods and improves service quality by allowing electronic issuance of receipts and payment declarations. Wilaya and municipal services must support authorizing officers in preparing their budgets through the electronic platform in coordination with regional treasury services. To facilitate monitoring and follow-up at the regional level¹⁰, data and performance indicators related to budget execution have been incorporated into integrated electronic platforms linking the Ministry of Interior and the Ministry of Finance. Data are also included in the GID platform to facilitate comparison between projected and executed budgets. This enhances transparency, accountability, and anti-corruption efforts.

In this regard, authorizing officers and public accountants affiliated with the State Treasury are required to generalize the joint circular between the Ministry of Interior and the Ministry of Economy and Finance concerning the use of the Integrated Revenue and Tax Management System (GIR). This circular calls for the gradual digitization of revenue operations. The system allows digital entry of collected amounts and the issuance of electronic receipts. Citizens can now make payments through various methods, including checks, electronic payment cards, and other electronic means¹¹.

From the foregoing, it is clear that digitizing local community services contributes significantly to strengthening local governance by reducing administrative complexity and improving control over revenues and expenditures, thereby regulating administrative operations and procedures¹².

Digital transformation has also enhanced the functioning of elected local councils through the implementation of digital platforms that regulate electronic invitations, attendance tracking, agenda

distribution, and digital notification. These platforms enable members of local councils to manage council sessions electronically and facilitate administrative oversight by supervisory authorities at the wilaya and municipal levels. This service reduces reliance on traditional management methods, allows digital distribution of session agendas, and ensures faster verification, approval, and authentication of council resolutions by supervisory authorities ¹³.

Section Two: Digitization of Local Administration Services Toward Users – Forms and Multiple Fields

Within its territorial jurisdiction, the local community is entrusted with providing proximity services to citizens in accordance with the competencies assigned to it under the Local Communities Laws of 2011 and 2012 governing municipalities and wilayas, respectively. These responsibilities are carried out through organization, coordination, and follow-up mechanisms. To this end, local communities exercise self-competencies, shared competencies with the State, and transferred competencies. They are also responsible for establishing and managing the public facilities and infrastructure necessary to deliver local services to citizens.

Therefore, modernizing and updating administrative mechanisms and tools constitutes a fundamental pillar for consolidating the principles of efficiency, transparency, and fairness in dealing with service users. This has been achieved through the deployment of various information systems launched by the State to strengthen the digital dimension of local communities. These systems contribute to enhancing the functioning of these entities by digitizing services and reducing direct contact with administrative, technical, and professional departments—particularly in light of global transformations imposed by the COVID-19 pandemic, as previously mentioned. The digitization process has since expanded to other fields, including urban planning and construction ¹⁴.

First Requirement: Digitization of Collective Services in the Field of Urban Planning

Urban planning constitutes one of the most significant self-competencies of local communities, given its close connection with citizens. This prompted the Ministry of Interior, Local Authorities, and Transport, in coordination with the Ministry of Housing, Urban Planning, and Public Works, to establish the electronic building permit platform and its related administrative and technical certificates.

This digital platform enables the dematerialized management of authorization requests in the fields of urban planning and socio-economic activities. The processing procedure is fully digital, beginning with the submission of the application by the applicant and ending with its electronic signature by the President of the Municipal People’s Assembly. Members of the relevant committees review the files and provide their opinions electronically.

The platform offers advanced digital services connected to the unified digital one-stop window at the municipal level, bringing together representatives of various administrative and technical services, including the State Property Directorate. It provides electronic building permits and electronic land registry services ¹⁵. The scope of its impact extends to licensing and authorizing economic activities, which represent the final stage in the realization of any economic project and the actual starting point of economic activity.

The digital urban planning portal enables interaction among all stakeholders through the platform, from the user submitting the request to the electronic signing of the permit by the President of the Municipal People’s Assembly and its placement in the applicant’s dedicated digital space. The adoption of this platform enhances opportunities for local development and investment attractiveness by promoting speed, efficiency, and transparency in urban planning procedures ¹⁶.

Second Requirement: Digitization of Local Community Services in the Field of Public Procurement

Public procurement occupies a central position in state activities due to its role in achieving public interest. It constitutes a practical tool in the hands of the administration ¹⁷ to ensure the proper management of

public facilities and the delivery of services. The new Public Procurement Law, which entered into force on August 5, 2023¹⁸, introduced several significant reforms.

The primary motivation behind revising the legal framework governing public procurement was the comprehensive reform movement initiated particularly after 2019, following the demands of the national popular movement calling for broad reforms in response to widespread corruption. These reform demands were reflected in major amendments to the legal system, notably through the 2020 constitutional amendment, which emphasized citizens' participation in managing public affairs and combating corruption.

Among the objectives pursued by public authorities was the elimination of classical administrative practices characterized by complex procedures and bureaucratic dominance. The modern approach to simplifying procurement procedures lies in the digitization of public procurement processes. While procurement had previously been governed by traditional methods, the 2023 Public Procurement Law confirmed a clear orientation toward digitization.

The effectiveness of the Public Procurement Law is closely linked to its responsiveness to the underlying reasons that justified its adoption. Its main innovations revolve around strengthening good governance in public procurement, ensuring legislative stability, and consolidating efficiency standards—particularly through the adoption of digital tools and technological platforms.

Under the heading of procedural transparency, the new Public Procurement Law mandates compulsory publication in the Official Bulletin of Public Procurement Contracts, as well as in written press. To further enhance transparency, the legislator also requires publication on the electronic portal dedicated to public procurement. This digital publication requirement strengthens accountability, transparency, and oversight in public spending.

Third Requirement: Challenges and Stakes Facing the Modernization of Local Administration

The modernization of local administration through its digital dimension faces numerous challenges that hinder the effective implementation of digital transformation programs within local public services. This situation requires local managers to adopt best digital practices in order to overcome these constraints.

1. Challenges of Transitioning Toward the Digitization of Local Administration

Human challenges constitute the primary obstacle to digital transformation within local communities. These are compounded by administrative challenges, particularly the limited digital infrastructure of local public services and the weakness of the financial resources allocated to them.

A. The Issue of Limited Human Resources in Local Administration

Human resources represent the principal driver of success for local public services in fulfilling their missions. However, daily realities reveal several indicators of weakness and limitations among local administrative staff, particularly in terms of job performance and the ability to effectively manage and utilize e-administration applications. This situation necessitates their rehabilitation through structured training programs, refresher courses, and continuous professional development aimed at enhancing their technical and digital readiness in line with the requirements of modern electronic administration.

This represents one of the priorities and strategic stakes of the Ministry of Interior, Local Authorities, and Transport, which is actively engaged in promoting e-administration. The effort has extended beyond administrative staff to include awareness-raising campaigns targeting citizens, civil society actors, and all relevant stakeholders regarding the importance of integrated information and communication technologies and their positive impact on both users and local administration, emphasizing the need for a shared sense of responsibility.

In the case of decentralized IT management, where local units independently manage and organize their information systems according to their competencies and needs, problems of overlap and lack of

coordination may arise despite their affiliation with the same parent administration. This may create inconsistencies and duplication within the same administrative structure.

B. Administrative Challenges of Digital Transformation in Local Administration

Administrative challenges are reflected primarily in the limited infrastructure of local digital administration, as well as weak internet connectivity—particularly in remote and rural areas. Digital infrastructure refers to the tangible components of digital administration, including the provision of computer equipment, high-speed network connections, associated devices, and modern communication tools.

There exists significant disparity in the use of digital technology across Algerian public administrations. The level of digital openness varies from one institution to another and according to the sector concerned. While local public services affiliated with local communities have recorded noticeable progress, other decentralized public institutions remain less advanced. This disparity can be attributed to differences in information systems and infrastructure, particularly internet bandwidth and technological capacity, which create gaps in the delivery of remote public services through digital processing centers.

The integration of information technology within local administration constitutes a key factor in developing a knowledge society. It contributes effectively and transparently to achieving development objectives and improving the quality of services provided to beneficiaries. Digitalization has become a benchmark indicator of local development, measured by the extent to which digital tools are effectively utilized. This reality necessitates overcoming the various obstacles that hinder digital transformation and limit its positive outcomes.

In our view, the success of digital transformation workshops and their effective deployment within local and public administrations has become an imperative for integration into a broader knowledge-based strategy. This requires the establishment of a digital environment characterized by simplification, efficiency, and adaptability to the constantly evolving needs of users. The success of this process depends on the readiness of local public services to apply digital standards and best practices in public service transformation ¹⁹.

Entering the realm of digital transactions requires a framework of essential guarantees, including the following:

A. Protection of Personal Data and Information

Public administration must ensure information security and the protection of personal data collected and stored in the course of delivering digital public services. This involves limiting data collection to what is strictly necessary, complying with national legal provisions, and implementing organizational, technical, administrative, and legal measures to create a secure digital environment. Such safeguards foster trust in digital data exchange between administration and users.

B. Establishing an Innovative, Efficient, and Transparent Local Administration

Digital technology must serve administration by enhancing performance and transparency, thereby enabling greater innovation, efficiency, and effectiveness. This requires a motivated workforce equipped with modern skills, the adoption of contemporary methodologies and technologies, and continuous performance evaluation—drawing inspiration from international experiences in digital transformation of local communities.

Key measures include:

- **Establishing specialized digital transformation teams within local communities** to facilitate the transition toward a digital culture. Such teams should combine diverse expertise and roles, ensuring the rapid and efficient development of digital services while considering all technical and organizational aspects. Members must be equipped with the necessary digital tools to perform their functions effectively.

- **Developing employees' digital competencies** through structured skill development plans. Continuous training ensures alignment between evolving skill requirements and the real needs of local administration, while preserving institutional expertise and promoting talent retention.
- **Adopting modern methodologies and innovative technologies** when designing, implementing, and improving digital services. Flexibility is essential to adapt quickly to technological developments and to meet users' needs effectively.

Furthermore, cooperation and exchange of expertise and pilot experiences among local communities help reduce errors, avoid duplication, promote reuse of successful solutions, improve service quality, and deliver value more rapidly.

CONCLUSION

By providing all the necessary material, human, and technical resources to ensure the success of this transformation and change, efforts have been made to accelerate this technology through the development of infrastructure and the preparation of specialized and qualified human resources for such technologies. We have observed that many countries around the world, particularly Western countries, were pioneers in establishing digital projects, recognizing their importance at all levels and seeking to facilitate the provision of services and information to individuals. Consequently, many Arab countries have undertaken the implementation of digitization projects in various fields. Algeria has been among these countries, providing material and human resources and enacting legislation to implement digitization and protect it from various risks.

It is noticeable that following Algeria's gradual transition in the field of administration from traditional systems to digitization, it has made significant progress in catching up with developed countries. This has been achieved through the practical implementation of digitization on the ground, by launching a series of projects to digitize local administration. These initiatives have materialized in the digitization of civil status services, vehicle registration cards, driving licenses, passports, and biometric national identity cards. More recently, the elections office has also been digitized. However, the process has not yet fully completed all its aspects.

In general, the digitization project can be considered relatively successful, given the nature of the services provided in the various offices of the regulatory departments and through the range of documents delivered—whether in civil status services, driving licenses, vehicle registration cards, passports, or biometric national identity cards. This confirms that the project can benefit both the government and citizens alike by modernizing administration through the application of information technology and bringing citizens closer to the administration by reinforcing transparency and moving away from bureaucracy. Nevertheless, this achievement does not negate the existence of several obstacles and shortcomings that the administrative system must overcome, particularly on the human and technical levels, in order to establish a comprehensive infrastructure capable of achieving digitization in the manner envisioned.

Digital transformation plays a crucial role in modernizing local administration and improving its performance by digitizing the activities and working tools of local communities in Algeria. This contributes to keeping pace with the transformations experienced by local decentralization under the regulatory laws governing territorial communities. Accordingly, local communities are required to adopt best digital practices in order to overcome the various challenges that hinder the effective implementation of digital transformation programs in local public facilities and to successfully meet the challenges of the technological revolution.

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