Digital Transformation and Its Impact on Local Administration in Algeria: Legal, Institutional, and Governance Perspectives

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Abstract

Digital transformation has become a central pillar of administrative reform and modern governance, particularly within the context of local administration in developing countries. In Algeria, digitalisation is no longer merely a technical modernization tool but rather a strategic legal and institutional choice aligned with the principles of the modern state, participatory democracy, transparency, and the rule of law. This study examines the implications of digital transformation for local administration in Algeria through an analytical and descriptive approach grounded in constitutional provisions, legislative reforms, and regulatory frameworks. The paper highlights the gradual shift toward digital mechanisms in managing public affairs at the local level, including civil status services, financial management, public procurement, and administrative communication. It argues that digitalisation contributes to improving the quality and accessibility of public services, rationalising administrative expenditures, strengthening transparency, and enhancing citizen trust in public institutions. However, the study also emphasizes that the effectiveness of this transformation depends on the adoption of comprehensive legislative reforms, institutional capacity-building, digital infrastructure development, and continuous training of administrative personnel. Ultimately, digitalisation is presented as a strategic pathway for reinforcing good governance, decentralisation, and sustainable local development within the Algerian administrative system.

Introduction:

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In light of these rapid digital transformations, a fundamental question arises: to what extent is local administration in Algeria capable of adopting digitalisation as a strategic option to increase the efficiency of public action, given the current legal and regulatory framework and the available technical and human resources? What is the reality of digitalisation within the Algerian administration?

To address this issue in the present study and within this topic, we have relied on the descriptive-analytical method, as it is appropriate for the nature of the subject. To answer the research problem and address its various dimensions, we have structured this study into two sections:

– The first section is devoted to discussing the conceptual framework of digitalisation. The first requirement addresses the concept of digitalisation, whereas the second examines its objectives and requirements.

– The second section is dedicated to discussing models and obstacles to the implementation of the digitalisation of local administration in Algeria. The first requirement addresses models of digitalising local administration in Algeria, whereas the second examines the obstacles to its digitalisation.

Section One: The Conceptual Framework of Digitalisation

Digitalisation constitutes one of the most prominent structural transformations witnessed in the contemporary world. It has become a central concept reflecting the transition from traditional methods of information processing and service management to the adoption of digital technologies as a foundation for administrative, economic, and social processes. Given that digitalisation represents an essential entry point for achieving administrative modernisation and enhancing institutional effectiveness,

This section seeks to provide a definition of digitalisation in local administration (first requirement) and to examine the objectives of digitalisation at this institution (second requirement).

First Requirement: Concept of Digitalisation

At the beginning of the twentieth century, Algeria sought to keep pace with developments in the digital revolution, given its many positive aspects, particularly in the management and administration of public utilities, especially local administration, as the body closest to citizens and their local affairs. The modernisation and development of this administration through digitalisation are significant, insofar as they enable rapid task completion, simplify procedures, promote transparency, and combat occupational offences, foremost administrative corruption. Accordingly, this requirement addresses the definition of digitalisation (first branch) and its characteristics (second branch).

First Branch: Definition of Digitalisation

The term *digitalisation* is regarded as one of the modern administrative terms that emerged as a result of the enormous revolution in information and communications networks, which brought about a radical transformation in the performance of institutions and administrative bodies by improving the quality of their services and increasing their capacity for innovation and renewal to keep pace with change.

Digitalisation has been defined as "the process of converting physical things into digital objects on the computer. For example, it involves converting a set of written texts and images from their ordinary form into digital form as files via technological tools such as a scanner.[1]

Charlotte Percy also defined it as "an approach that converts information and data from the analogue system to the digital system.[2]

Digitalisation in information institutions is the process of converting information resources from their traditional form into a digital form. This procedure is undertaken to provide the most significant possible amount of information

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[1] Sardouz, Zine Eddine. "The Role of Digitalisation in Improving the Quality of Public Service in Algeria: The Municipality as a Model." *Algerian Journal of Law and Political Science* 8, no. 2 (2024): 650.

[2] Abu Diya, Hanan. "The Role of Digitalisation in Improving Service Quality in the Palestinian Ministry of Interior: A Case Study." *Idara*, no. 57 (n.d.): 61.

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resources suitable for beneficiaries. It contributes to preserving information resources for a more extended period and delivering them to the largest possible number of beneficiaries worldwide.[3]

Second Branch: Characteristics of Digitalisation

Compared with traditional administration, digital administration is characterised by features and advantages that place it at a higher level of service quality. This is attributable to the absence of any temporal or spatial differences between the service provider and the beneficiary.[4] Among the most prominent characteristics of digital administration are the following:

– Administration without time: technology makes all places adjacent by reducing time.

– Administration without place: ease of access, at a distance, to stored information through reliance on digitalisation.

– Paperless administration: converting everything that is paper-based into an electronic form recorded on electronic media, to which one can readily return when needed; reducing the use of paper also addresses the problem of preserving and documenting transactions (paper archives).

Second Requirement: The Objectives and Requirements of Digitalisation

In recent years, digitalisation has become a strategic option pursued by modern states as part of their endeavour to strengthen governance and enhance institutional performance, as it constitutes an effective tool for reorganising administrative work and developing public service in accordance with standards of transparency and efficiency. This requirement addresses the objectives of digitalisation (first branch) and examines the requirements for its implementation in local administration (second branch).

First Branch: Objectives of Digitalisation

Since the process of digitalisation is the foundation for building electronic administration, it is certain that the former is of particular importance to the latter and seeks to realise it. The intended objectives of the digitalisation process may be summarised as follows:

– Completing work rapidly, in the least amount of time and at the lowest cost.

– Eliminating the use of paper in administrative work, thereby reducing material burdens.

– Preserving data and information and retrieving them when needed while reducing the risk of their loss.

– Eliminating ambiguity in dealings, administrative corruption, and manipulations by abolishing intermediation and favouritism.

– Enhancing transparency[5] Moreover, credibility is achieved by eliminating bureaucracy at work.

– Reducing work procedures.[6]

Second Branch: Requirements for Digitalisation[7]

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[3] Al-Khath'ami, Masfirah bint Dakhil Allah. "Digital Transformation Projects and Experiences in Information Institutions: A Study of the Strategies Adopted." *RIST* 19, no. 1 (2010): 23.

[4] Mezghiche, Walid, and Ahmed Medghri Moulay. "Digitalising Algerian Administration: What Effectiveness? Local Administration as a Model." Paper presented at the International Forum on Outstanding Performance of Organisations and Governments, 5th ed., "Institutional Performance in the Digital Economy," University of Ouargla, (2020), 233.

[5] Madar Knowledge Centre for Research and Studies. *Public Service and Mechanisms for Its Advancement in Government Administrations: A Theoretical Approach and Local and Global Experiences*. Vol. 2. Algiers: New University Publishing, 2020. 48.

[6] Bahloul, Soumia. *The Role of Electronic Administration in Activating the Performance of Regional Collectivities in Algeria*. PhD diss., Faculty of Law and Political Science, University of Batna 1, 2017–2018. 120.

[7] Abu Diya, Hanan. Previously cited work, 64.

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The implementation of digitalisation requires substantial information competencies and extensive technical means, regardless of the administration or public institution seeking to apply it. This can only be achieved via several stages and steps, including the following:

– Qualified human resources: qualified cadres possessing the skills and capacities to deliver services with quality.[8]

This is the direction adopted by the Algerian legislature in Law 11–10[9] Relating to the municipality, which paid attention to the training of the locally elected municipal official. Article 39 provides the following: "The municipal elected official is required to attend training courses and skills-improvement programmes related to municipal management, organised for his benefit." This contrasts with the position under the laws relating to local authorities issued since independence, which do not provide for the training of locally elected officials. Article 131 of the same law further states that "employees of municipal departments and institutions shall benefit from training and skills improvement in accordance with the legislation and regulations in force."

– Financial resources: the provision of all equipment and logistical means necessary for the digitalisation process.

– Devices and equipment: the digitalisation of administration depends on the necessity of providing an appropriate infrastructure that keeps pace with technological development. The infrastructure constitutes an enabling base of shared capabilities essential to the existence and operation of information systems. It comprises system resources and information technology tools (scanners, computer hardware, software, networks, etc.), data resources (data warehouses, databases, database management systems), and computerised information systems and their applications in electronic administration and electronic business.[10]

– Software: the digitalisation process requires the programs and instructions needed by the computer to operate; it is therefore necessary to provide and use them for digitalisation to be carried out.

– Organising and ensuring the security of all electronic transactions and protecting them from intrusion.

Section Two: Models and Obstacles to Implementing the Digitalisation of Local Administration in Algeria

Algeria has witnessed a series of developments, particularly following the imperative of entering the world of modern technologies in the field of communications and information, within the framework of the digital transformation initiative and in furtherance of transformation plans towards a national electronic service. Conversely, the introduction of digitalisation into the Algerian administration may present several obstacles. This section presents models for digitalising Algerian local administration (first requirement) and the obstacles to implementing digitalisation at this institution (second requirement).

First Requirement: Models of Digitalising Algerian Local Administration (the Municipality)

The State has worked to introduce technology into its public facilities to keep pace with technological progress and deliver a high level of service to its citizens, adopting several measures and projects. This requirement addresses the digitalisation of civil status (first branch), biometric service (second branch), and public procurement (third branch).

First Branch: Digitalisation of Civil Status

The digitalisation of civil-status registers constitutes the first step taken by the Ministry of the Interior when it adopted the digital system. A database, known as the local network, was established at the municipal level alongside another national database. Citizens can now obtain their documents at the click of a button and extract all civil-status documents from the nearest possible municipality. This is in addition to national identity cards, biometric passports, and vehicle

[8] Al-Suwaifan, Abd al-Salam Habis. *Managing the Security Service by Electronic Means*. Alexandria, Egypt: Dar al-Jami'a al-Jadida, 2012. 55.

[9] Algeria. Law No. 11–10 of 22 June 2011 relating to the municipality. *Official Gazette* no. 37 (3 July 2011), as amended and supplemented by Ordinance No. 13–21 of 31 August 2021, *Official Gazette* no. 67 (31 August 2021).

[10] Yasin, Saad Ghalib. *Electronic Administration and the Prospects of Its Arab Applications*. Riyadh: Research Centre, Institute of Public Administration, Kingdom of Saudi Arabia, (2005). 227.

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registration cards. More recently, the elections office has been digitalised. This process eliminated queues that both districts and municipalities alike had previously experienced.[11]

Within this framework, the National Civil Status Register was established, with all municipalities and their administrative annexes—and even diplomatic missions and consular districts—linked to it, in accordance with Article 25 bis of Law 14-08,[12] which provides "An automated national civil status register shall be established within the Ministry of the Interior and Local and Regional Authorities and shall be linked to municipalities and their administrative annexes and consular districts."

In this context, the Algerian legislature introduced another measure: exempting citizens from the requirement to submit civil-status documents recorded in the automated national civil status register. Article 1 of Executive Decree 15-247[13] provides the following: "Within the framework of implementing measures relating to electronic administration, the citizen has been exempted from submitting civil-status documents available within the automated civil status register."

Following the promulgation of the Electronic Certification Law 15-04,[14] civil status documents began to be issued electronically. Citizens can now obtain their documents within a few minutes, with complete transparency and without intermediation or favouritism, thereby contributing to the establishment of the principle of equal opportunities, as all have equal access to public services. This law was followed by Executive Decree 15-315, which authorised the issuance of electronic copies of civil-status documents.[15]

Second Branch: Digitalisation of the biometric service (biometric national identity card and passport)

The biometric passport and national identity card project aims to modernise and digitalise identity documents. The biometric national identity card is a fully secure, flexible document that is in line with the latest global technologies, enabling citizens to conduct various administrative procedures. The biometric passport is likewise a secure, machine-readable travel document that complies with international standards ratified by the International Civil Aviation Organisation.

Third Branch: Digitalisation of Public Procurement

The State has worked to introduce digitalisation into public procurement to simplify administrative procedures for contractors and enhance competition. Executive Decree No. 15-247, under Article 203, establishes an electronic portal for public procurement to be used as a database through which tenderers are not required to submit documents that the contracting authority can obtain electronically. The electronic portal provides the contracting authority and economic operators with a set of information, including legal texts, circulars, instructions, etc.[16]

The digitalisation of public procurement has facilitated contractor participation by enabling the rapid dissemination and accessibility of procurement notices, promoting rationalised expenditures, and protecting public funds.

Second Requirement: Obstacles to the Digitalisation of Local Administration in Algeria

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[11] Jbour, Ali Sayeh. "Electronic Administration and Its Role in Developing the Performance of Local Collectivities under the Implementation of E-Government in Algeria." *Al-Hoggar Journal of Economic Studies* (University Centre of Tindouf), no. 1 (2017): 16.

[12] Algeria. Law No. 14–08 of 9 August 2014 amending and supplementing Ordinance No. 70–20 of 19 February 1970 relating to civil status. *Official Gazette* no. 49, 20 August 2014
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[13] Algeria. Executive Decree No. 15–247 of 27 July 2015, providing for the exemption of citizens from submitting civil-status documents available within the automated civil-status register. *Official Gazette* no. 41, 29 July 2015
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[14] Algeria. Law No. 15–04 of 1 February 2015 relating to electronic signature and electronic certification. *Official Gazette* no. 06 (10 February 2015).

[15] Algeria. Executive Decree No. 15–315 of 10 December 2015 relating to the issuance of copies of civil-status documents electronically. *Official Gazette* no. 68, 27 December 2015.

[16] Sardouz, Zine Eddine. Previously cited work, 29.

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There are numerous obstacles facing the use of electronic administration, which may be summarised as follows:[17]

– The lack of accuracy and reliability of all the information available on the global information network, as there may be unknown or suspicious websites.

– The existence of certain negative attitudes among some managers and employees towards the use of modern technologies, including the global information network.

– The prevalence of numerous viruses that are transmitted between computers through the global information network.

– Apprehension regarding technology and the lack of persuasion concerning electronic transactions owing to fears of potential infringement of, and threats to, the elements of security and privacy in government services.

– Weak planning and coordination at the level of senior administration in relation to electronic-administration programmes.

– The absence of a clear strategic vision regarding the use of information and communications technology in a manner that serves the transformation towards the electronic organisations of the future.

– Resistance to change within national institutions by employees, manifested against the application of modern technologies out of fear for their positions and professional future.

– The high financial cost of establishing the global information network, as it requires a good communication network and computers; this is linked to the capacity to finance the necessary amounts.

– The scarcity of financial resources for delivering training programs and engaging in information-technology expertise in the field of information technology, which requires high competence.

– The absence of supportive political will to bring about a qualitative shift towards electronic administrations and to persuade administrative bodies of the necessity of applying modern technology and keeping pace with the digital age.

– The lack of a protected electronic working environment within legal frameworks that define the conditions of electronic dealings, such as the absence of legal legislation criminalising intrusion and the sabotage of electronic-administration programmes, and setting deterrent penalties for perpetrators.

Conclusion

The digitalisation of local administration in Algeria constitutes a fundamental step towards building a modern public service grounded in the principles of transparency and efficiency and towards improving the relationship between the administration and the citizen.

The implemented experiences have shown that political will exists and that the legal framework is undergoing continuous development; however, practical implementation continues to face operational difficulties related to infrastructure, intersectoral coordination, inadequate human resource qualifications, and the instability of local administrative organisations. Accordingly, achieving an effective digital transition requires a unified strategic vision and greater investment in technology and knowledge to modernise local public services and develop their capacity to respond to the needs of national development.

Findings:

1.   The lack of unified technical and legal standards for managing local data results in inconsistent digitalisation processes.

2.   Weak specialised training in information technology, cybersecurity, and information systems management impedes the optimal operation of the adopted digital solutions.

3.   Digitalisation has improved certain services, particularly civil status; however, it has not yet reached the level of comprehensive electronic service provision.

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[17] Qawarih, Oum El Kheir Samia. "Electronic Administration as an Alternative Strategy to Traditional Administration." *Afaq Journal for Research and Studies* 4, no. 1 (n.d.): 113–130.

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4.   Citizens continue to encounter obstacles arising from the multiplicity of platforms, the absence of unified service interfaces, and difficulties in digital access in certain areas.

5.   Digitalisation has demonstrated a clear capacity to reduce certain forms of bureaucracy and administrative corruption; nonetheless, the absence of effective digital oversight and unified data rules limits this impact.

Recommendations:

1.   Training and qualifying human resources through specialised programs in the management of digital systems, cybersecurity, and data management.

2.   Strengthening public–private partnerships in the development, operation, and maintenance of local digital solutions.

3.   Reinforcing the legislative framework by reviewing the texts governing the work of local authorities to integrate digitalisation as a legal obligation and to define unified standards for electronic services.

4.   Establishing data-governance mechanisms through the creation of unified and secure databases among various local and ministerial departments.

5.   Citizens should be involved through interactive platforms for reporting, enquiry, and opinion polling, thereby enhancing trust and consolidating participatory democracy.\

Ethical Considerations

This study was conducted in accordance with accepted ethical standards for legal and administrative research. The research is based on the analysis of constitutional provisions, legislative texts, regulatory documents, and publicly available official data related to digitalisation and local administration in Algeria. No human participants, interviews, surveys, or personal data were involved. Consequently, issues related to informed consent, confidentiality, or data protection do not arise, and ethical committee approval was not required.

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Conflict of Interest

The authors declare that they have no known competing financial, professional, or personal interests that could have influenced the research, analysis, or conclusions presented in this article.

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