



DIGITAL TRANSFORMATION STRATEGY AND ITS IMPACT ON REGULATING AND ENHANCING PUBLIC SERVICE DELIVERY IN ALGERIA

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Abstract:

Recent developments in communication and information technology, driven by Internet advancements, have significantly transformed many sectors, particularly management. The adoption of modern communication tools in the public sector and the shift toward e-government have changed traditional administration into electronic administration. This digital transformation has become essential due to its role in enhancing institutional efficiency and improving the quality of public services. Consequently, public service organizations must embrace digital transformation to deliver better services and achieve more effective management. Moreover, digital transformation is not limited to implementing technology; it is a comprehensive process that reshapes institutional operations, internal procedures, and service delivery, making services more accessible, faster, and efficient.

Keywords: Public service; E-administration; Development; Digital transformation; Public interest.

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Introduction:

The evolution of human societies has been marked by a continuous and progressive advancement, transitioning from primitive communities to agricultural societies, then to industrialized nations, and eventually to an information society. This trajectory culminates in what Christian Fuchs describes as the virtual society, or digital society, which is currently undergoing various transformations and transitions.

This evolution has led to the emergence of numerous contemporary phenomena and has broadened perspectives across all domains and sectors. One of the most notable areas impacted is the governmental sector, especially through the enhancement of public services, which have achieved significant advancements in the digitalization of their operations.

This transformation is evident in public administration, which acts as the driving force behind the state's development and the provision of services to its citizens.

As a result, information technology has been incorporated into the operational frameworks of administrative entities.

The state has therefore endeavored to modernize public utilities and enhance them with cutting-edge information technologies, which exhibit unique attributes in comparison to other technical resources. These initiatives have played a significant role in enhancing, expediting, and updating the effectiveness of administrative service delivery.

As a result, it has become crucial for public administration to establish integrated information systems that include organization and data processing, especially through the application of computers, communication technologies, and software solutions.

Expanding on the previous discussion, it is unimaginable to offer electronic services that are accessible via the Internet without streamlining procedures and enhancing flexibility within administrative processes. In this regard, the notion of e-administration or e-government arises as a necessary result of the interplay between information and communication technologies, which are designed to simplify, enhance, and facilitate the interaction between citizens and public administration.

This prompts us to consider the following inquiries: In what ways has digital transformation played a role in enhancing the efficiency of public utilities? Additionally, how have digital transformations influenced the fundamental principles that govern the operation of public services?



THE FIRST TOPIC: THE NATURE OF DIGITAL TRANSFORMATION

FIRST REQUIREMENT: THE CONCEPT OF E-ADMINISTRATION

Numerous nations have endeavoured to keep up with advancements in communication technologies, which have facilitated the embrace of e-administration to attain effective and swift outcomes. Nevertheless, this necessitates the implementation of measures across various levels and the promotion of achieving specific goals by appropriately considering these measures—most importantly, the online provision of services.

Consequently, digital services become a primary focus, as e-administration tools must be designed to be user-friendly,¹ featuring enhanced interfaces and streamlined procedures. Such enhancements can be realized by motivating public administrations to integrate digital services, leveraging the successes already achieved in the private sector, especially among financial institutions, which have converted many of their operations into automated digital processes.

The emphasis on the integration of information and communication technologies (ICT) within vital public services has depended on the application of these technologies, which have been instrumental in enhancing fundamental services and processes, as the primary objective of this transformation is to serve the public good.

Certain academics contend that e-administration represents a contemporary method that relies on the implementation of all activities and transactions carried out between two or more entities—be they individuals or organizations—utilizing electronic means, including email, electronic fund transfers, and the exchange of electronic documents.²

E-administration can be succinctly described as the transition from executing transactions and providing public services through conventional manual approaches to an electronic format. In essence, e-administration entails the execution of administrative tasks and the delivery of public services through the Internet or intranet, eliminating the necessity for users to physically attend administrative offices to complete their transactions.

Furthermore, e-administration is founded on a novel and sophisticated concept that transcends the contemporary principle of "connect, don't commute," advancing it further to the notion of "go online, don't stand in line".³

The aim of implementing contemporary communication technologies in public utilities and providing public services through electronic means is to function within a paperless framework, given that these systems are fundamentally dependent on information technology. This transition seeks to boost productivity



and efficiency while elevating the quality of services rendered by public institutions.

Consequently, the notion of e-administration has gained significant recognition, especially in light of the swift global shift towards the digital age.⁴

E-administration represents a type of public administration that employs information and communication technologies to execute its functions. Its primary objective is to deliver services to citizens more swiftly and accurately by facilitating administrative tasks through computer systems.

Given the substantial digital transformation occurring globally, e-administration has emerged as an essential component, owing to its benefits in speed, accuracy, and cost-efficiency when compared to traditional paper-based systems, which frequently led to the unnecessary buildup of documents. It aims to create a computerized data framework that depends more on automated data processing rather than human involvement.⁵

For any nation to keep up with these advancements, modernize its public services, and embrace electronic operational methods, it must confront the challenges that impede the implementation of e-administration systems within public utilities. Among these challenges are:

- **Technical challenges:** The execution of the e-administration concept encompasses various technical difficulties. The backbone of information and communication technologies (ICT) poses the foremost challenge to digital transformation. Concurrently, it is crucial to focus on the primary issue of electronic systems—specifically, the privacy and security of data and information. There are ongoing worries regarding potential data breaches that could impact public institutions utilizing modern technologies via the Internet. This necessitates the creation and maintenance of robust information security systems.
- **Lack of qualified staff training:** Inadequate training and a lack of digital skills among employees represent one of the significant obstacles to digital administration. It is vital to recruit and train personnel to develop both technical and professional skills. This is especially critical in order to defend against cyberattacks, as hackers can penetrate digital systems, take control of information infrastructures, compromise websites, disrupt operations, and impede the continuity of public services.
- **Internet availability:** Access to the Internet itself can pose a challenge, as not all institutions enjoy reliable connectivity. Furthermore, limited computer literacy serves as a considerable barrier. Sufficient and stable Internet bandwidth is essential; otherwise, it becomes a significant hindrance to providing high-quality public services.



- **The concept of e-administration** involves a technological transformation within administrations and institutions, grounded in clearly articulated principles and objectives. Despite its numerous benefits, various challenges obstruct its implementation, rendering digital transformation particularly arduous—especially in Arab countries. Based on the aforementioned definitions, the application of e-administration is evident in the utilization of modern communication tools, which have become an unavoidable necessity for keeping pace with advancements in information and communication technologies.
- According to the previously mentioned definitions, the implementation of e-administration is evident in the utilization of contemporary communication technologies, which have become an essential requirement for staying aligned with advancements in information and communication technologies. This evolution has, over time, resulted in the development of what is currently referred to as electronic public services.

Firstly: Administrative definition

From an administrative viewpoint, digital transformation is characterized as the process of reimagining and reorganizing administrative practices and work methodologies within organizations, ensuring responsiveness to swift digital advancements and fostering increased flexibility in organizational performance.

Secondly: Economic definition

From an economic perspective, digital transformation signifies the shift from conventional business models to the extensive implementation of digital technologies, aimed at improving operational efficiency and attaining sustainable growth in digital marketplaces.

Thirdly: Technical definition

From a technical perspective, digital transformation encompasses the application of contemporary digital tools and technologies—such as cloud computing, artificial intelligence, and the Internet of Things—to enhance and streamline operational processes and boost efficiency.

Fourthly: Comprehensive definition

Broadly speaking, digital transformation can be described as the process of embedding digital technology into diverse facets of business, governmental services, and society, resulting in significant alterations in operational execution and service delivery, with an emphasis on innovation and efficiency.

Digital transformation is characterized as “a thorough transformation process that arises from the interplay of two phenomena: dematerialization and the reorganization of mediation patterns, which collectively influence all business activities, operations, and internal processes within the organization”.⁶



Additionally, it pertains to the method by which an organization incorporates digital technologies into every aspect of its operations to enhance its performance. This approach is driven by data and relies significantly on the application of intricate algorithms, aiming to create new opportunities, streamline customer interactions, and foster loyalty through the effective utilization of the organization's diverse functions, such as marketing, supply chain management, finance, and human resources.

Digital transformation is also understood as the process of analysing user needs and leveraging technology to enhance the end-user experience. These users may be service beneficiaries, customers, or employees, and many institutions must take into account the perspectives of both groups. The purpose of digital transformation is to develop various activities through new technological experiences and by rethinking how this approach is adopted, in light of the achievements realized across different organizational and service levels.

It is also defined as a new business model that relies on the use of digital technologies to create new products and services, as well as to determine how they are delivered, directed, and tailored to customers or users.

Furthermore, digital transformation is described as the process of integrating digital technology into the business environment, bringing about a significant and comprehensive change in the way value is delivered to end users. It also involves a cultural transformation within organizations, which must adapt to these changes.

THE SECOND TOPIC: THE IMPORTANCE OF DIGITAL TRANSFORMATION

The importance of digital transformation is reflected in the objectives it seeks to achieve, particularly when applied to public services. It requires full commitment from the administration; when leadership focuses on core objectives, the chances of successful digital transformation significantly increase. Its key benefits include:

- **Service improvement:** Improving service quality is one of the fundamental pillars of digital transformation. Internal changes alone are not sufficient; rather, users must experience better services that meet their needs more quickly, comprehensively, and accurately. This, in turn, has a positive impact on administrative performance and service delivery.
- **Enhanced internal collaboration:** If the digital transformation project is sufficiently comprehensive, it can unify the entire institution and strengthen internal collaboration, fostering better coordination among different departments.
- **Process improvement:** Every organization operates through a series of repetitive processes, often involving documentation or approvals. Digital



transformation provides an opportunity to refine these processes and enhance efficiency, thereby improving the execution of various tasks. One of its key advantages is its flexibility—it can target specific areas of work or the entire organization simultaneously through the use of modern communication technologies.⁷

- **Increased efficiency:** This refers to the interaction between employees' expertise and their ability to use modern communication tools within advanced processes. By leveraging the unparalleled capabilities of modern technology, workflows can become faster and more accurate. Employees spend less time on routine tasks, allowing them to focus on innovation and creativity while maintaining a competitive edge.
- **Autonomy:** Technology enables employees to work independently, making this autonomy more connected and flexible. Decision-making time is reduced through digital transformation, as vast amounts of data can be measured and analyzed to improve performance and accelerate the delivery of services.
- **Creating New Business Models:** The digital revolution has opened the door to numerous new business models that contribute to delivering services to users or stakeholders. These models are supported and protected through information security systems against theft or data falsification.
- **Cost Reduction:** Costs are lowered by minimizing physical movement and reducing effort and time through the use of modern communication technologies.
- **Improving Employee Performance:** Digital transformation can create a work environment where employees enhance their productivity in daily tasks. For example, tools such as Microsoft Teams can help reduce losses and increase productivity within public institutions.
- **Data Security Compliance:** To ensure and strengthen trust in electronic transactions, it is essential to guarantee the protection of information and data security by safeguarding them against cyberattacks and unauthorized access.

THE THIRD TOPIC: TYPES OF DIGITAL TRANSFORMATION

FIRST REQUIREMENT: GOVERNMENT DIGITAL TRANSFORMATION

This type focuses on improving the delivery of public services to citizens and simplifying administrative procedures. It is achieved through mobile applications and websites that enhance accessibility and improve the overall user experience.⁸



SECOND REQUIREMENT: PROCESS DIGITAL TRANSFORMATION

This type aims to improve the efficiency of internal organizational processes through the adoption of digital technologies. It includes process automation and data analysis to achieve operational efficiency and support continuous improvement.⁹

THIRD REQUIREMENT: PRODUCTION AND MANUFACTURING DIGITAL TRANSFORMATION

This involves using digital technologies to enhance production processes and foster innovation in traditional industries. These efforts include the use of robotics, artificial intelligence, and data analytics to achieve higher efficiency and improved quality.

FOURTH REQUIREMENT: SUPPLY CHAIN DIGITAL TRANSFORMATION

This type seeks to improve supply chain management by enhancing shipping and distribution processes. It includes the use of tracking technologies, analytics, and digital communication to increase efficiency and strengthen collaboration with suppliers.

FIFTH REQUIREMENT: FINANCIAL SECTOR DIGITAL TRANSFORMATION

This type aims to improve financial services and facilitate banking operations. It includes banking applications, digital wallets, and electronic payment technologies to provide a seamless and innovative financial experience.

SIXTH REQUIREMENT: DIGITAL TRANSFORMATION IN EDUCATION

Aims to enhance the learning experience by integrating digital technologies into educational methods. This includes distance learning platforms, e-learning applications, and the provision of modern digital educational content.¹⁰

SEVENTH REQUIREMENT: DIGITAL TRANSFORMATION IN TOURISM AND HOSPITALITY

Focuses on improving the experience of tourists and travelers by facilitating booking and accommodation processes. It involves the use of augmented reality technologies and digital tourism applications to enhance comfort and interaction with visitors.

EIGHTH REQUIREMENT: DIGITAL TRANSFORMATION IN MARKETING AND SALES



Relies on the use of digital tools to strengthen marketing and sales strategies. This includes email marketing, social media, and online shopping experiences to better meet customer needs.

NINTH REQUIREMENT: DIGITAL TRANSFORMATION OF CUSTOMER EXPERIENCE

This type aims to improve customer interaction with products and services by offering a personalized and distinctive experience. It is achieved through data analytics and artificial intelligence technologies to meet customer expectations more accurately and efficiently.

In summary, digital transformation spans various sectors and fields, with each type contributing to achieving specific goals related to efficiency, innovation, and improving the user or customer experience in line with the demands of the modern digital era.

THE FOURTH TOPIC: THE IMPACT OF DIGITALIZATION ON THE FUNDAMENTAL PRINCIPLES OF PUBLIC SERVICE

Regardless of the diversity of public services, their methods of establishment, and their differences, they all remain subject to a set of general principles necessary to achieve the public interest.¹¹ These principles include:¹²

FIRST REQUIREMENT: THE PRINCIPLE OF CONTINUITY OF PUBLIC SERVICE

This principle is reflected in the obligation of the public authority to ensure the uninterrupted functioning of public services, regardless of their nature or the difficulties they may encounter. Public services must continue to deliver their services consistently, accurately, and efficiently.

In this regard, digitalization contributes significantly to transforming and modernizing public services. It enables the delivery of services to users in a modern and rapid manner, without requiring physical effort or travel, and without administrative delays. All of this serves the achievement of the public interest. The continuity of public service in meeting the needs of users reflects its regularity and commitment to maintaining public order, particularly through the use of modern communication tools such as the internet.

The management of public services is the duty of the administrative authority, which must provide compensation for any violations of this responsibility that may inflict harm on users. This is especially pertinent in situations like internet outages that interfere with their interests and lead to damages. However, this does not eliminate the option of taking the administration to the administrative courts, as



long as the legal prerequisites for a claim are satisfied, indicating a failure in the provision of the public service.

SECOND REQUIREMENT: THE PRINCIPLE OF EQUALITY BEFORE PUBLIC SERVICE¹³

The principle of equality stands as a cornerstone in numerous constitutions and national laws across all nations. It signifies that all individuals are entitled to equal access to public services, indicating that such services should be extended to anyone who requests them, free from discrimination.

The implementation of contemporary communication technologies, where accessible, enhances equal access to public services and streamlines their provision. Nevertheless, this equality is not absolute; it is contingent upon the satisfaction of legal prerequisites. In other words, equality does not eliminate the requirement to fulfil specific conditions that must be met by those seeking to utilize public services.

Algeria has endeavoured to uphold this principle through a series of reforms, including:

- **Reforms in the justice sector (06/02/2004):** These changes facilitated access to a range of cases, their scheduling, and monitoring of progress, particularly through the implementation of remote trials and the utilization of electronic bracelets as a method for enforcing penalties.
- **Digitalization of local administration (wilaya and municipality):** This was accomplished by connecting them to the Ministry of the Interior in 2017, enabling citizens to acquire biometric national identity cards, biometric passports, and even biometric vehicle registration cards beginning in 2015.

THIRD REQUIREMENT: THE PRINCIPLE OF ADAPTABILITY (MUTABILITY) OF PUBLIC SERVICE

The structuring of public services and their management methodologies necessitate ongoing renewal and transformation to effectively respond to evolving and dynamic circumstances. In this regard, digitalization assumes a crucial role in the modernization and enhancement of public services, irrespective of the variety of management techniques employed. It empowers the administration to adjust its strategies and service delivery frameworks by embracing electronic solutions, thereby transitioning from traditional paper-based administration to e-administration.

This shift does not conflict with the core principles that govern public services; instead, it seeks to implement contemporary and cohesive mechanisms that allow municipalities and regulatory bodies to simultaneously manage and oversee financial resources through electronic monitoring. In this context, the



Ministry of the Interior and Local Authorities has embarked on a modernization initiative aimed at the management and utilization of municipal budgets via an electronic budgeting system founded on a unified technological framework. This system is designed to enhance communication between local administration directorates and the municipalities they oversee, as well as with the pertinent ministry.

In conclusion, the importance of digital transformation is not limited to how technology is used within institutions and organizations, whether in the public or private sector. Rather, it plays a crucial role in enhancing operational efficiency and improving the quality of services delivered to customers and the target audience.

Digital transformation is based on the optimal use of technology in a way that supports workflow across all departments of public service institutions, as well as in their interactions with users and the public. This contributes to improving services, facilitating access to them, and saving both time and effort simultaneously. Ultimately, these objectives can only be achieved through respect for the fundamental principles governing the operation of public services.

Conclusion:

In summary, digital transformation initiatives within public services are ongoing endeavors that persist indefinitely, as they are intricately connected to the continuous advancements in technology on a global scale. Similar to any strategic undertaking, these initiatives require consistent monitoring, evaluation, and comparison with international best practices. When deemed necessary, they should be adjusted with a focus on the user— or service beneficiary— at the heart of the transformation process, given that digitalization has emerged as an unavoidable necessity that must be accepted.

In Algeria, digital transformation signifies a pivotal move towards establishing a robust and sustainable economy. Its effects extend beyond merely stimulating economic growth to enhancing living conditions and improving institutional effectiveness. In spite of various obstacles, such as inadequate digital infrastructure and a lack of specialized technological expertise, governmental policies and societal transformation efforts demonstrate a strong commitment to realizing this objective. With ongoing initiatives to enhance communication networks, broaden digital infrastructure, and invest in the digital skill development of youth, Algeria possesses the potential to serve as a regional exemplar. This is illustrated by its capacity to leverage digital transformation as a means to fulfil sustainable development goals, which include advancing education, fostering financial inclusion, and encouraging innovation across diverse sectors.



Digital Transformation Strategy and its Impact on Regulating and Enhancing Public Service Delivery in Algeria

Implementing effective strategies that prioritize digital inclusion and bolster collaboration between the public and private sectors can greatly facilitate significant advancements towards constructing an innovative and thriving digital economy. This transformation not only elevates Algeria's economic and social status on both regional and global fronts but also aligns it with worldwide technological progress, positioning the nation on a sustainable trajectory towards advancement and prosperity.

In the context of worldwide digital transformation, e-administration has emerged as the most efficient method to guarantee the ongoing provision of public services, regardless of whether conditions are standard or extraordinary. The global health crisis has highlighted the essential role of e-administration in managing crises, necessitating the extensive implementation of digitalization across multiple sectors—economic, educational, and others—to ensure the consistent and uninterrupted delivery of public services.

Results:

- Algeria possesses essential infrastructure for public services, which it depends on to facilitate its shift towards digitalization.
- Algeria is working diligently to enhance and modernize the delivery of public services, with the objective of increasing efficiency and the quality of services.
- Algeria aims to align itself with global advancements and to leverage the best international practices and opportunities available, allowing it to move towards entirely digital public services.
- The digital transformation in Algeria has transitioned from mere discussion to tangible action; it has become an imperative rather than a choice.

Recommendations:

- The necessity for a well-articulated strategy and roadmap: It is crucial to formulate a clearly defined strategy paired with a roadmap that delineates the priorities of public services and the goals to be accomplished through digital transformation, thereby ensuring the fulfillment of public interest and the efficient provision of services.
- Incremental and equitable implementation: Digital transformation initiatives ought to be executed in a gradual and balanced fashion. This approach must be overseen and monitored by the highest echelons of state leadership and under the jurisdiction of the relevant supervisory authorities, considering its direct implications for the public interest.
- Allocation of financial resources and material assets: Sufficient funding and requisite material resources must be guaranteed to facilitate effective implementation.



Digital Transformation Strategy and its Impact on Regulating and Enhancing Public Service Delivery in Algeria

- Development of contemporary ICT infrastructure: The establishment of advanced telecommunications and information technology infrastructure is a fundamental prerequisite for successful digital transformation.
- Activation of monitoring and evaluation frameworks: It is imperative to deploy effective tools and procedures to supervise the execution of the transformation strategy. Notably, the introduction of a Digital Transformation Program Manager can significantly enhance the success of implementation.
- Human capacity enhancement: One of the most pivotal success factors of any digital transformation initiative is the human component—users, beneficiaries, and the general populace. Thus, it is vital to center the human aspect in the transformation process through training and capacity building.
- Ensuring stakeholder engagement and accessibility: It is essential to ensure the active participation of users throughout the transformation process by facilitating access to official digital platforms for public services and effectively utilizing them, along with the technological tools and channels employed. This ultimately supports the primary goal of streamlining procedures and ensuring straightforward access to services.

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