

DIGITAL TRANSFORMATION STRATEGY IN THE PUBLIC SECTOR: BASICS AND CHALLENGES



Dr./ Inezarene Adel ^{1,2}

¹ University of Mostaganem, (Algeria)

² Corresponding Author: adel.inzarene@univ-mosta.dz

Date of submission: 07/08/2024 Date of acceptance: 23/09/2024 Date of publication: 28/04/2025

Revision of the article: Dr./ Zerara Saida (Univ. of Algiers 2)

Abstract:

Digital transformation is a critical and interdisciplinary topic that raises various research questions and issues. This term has grown significantly recently, making it a focal point for research, particularly within the framework of government and public sector entities. This study explores the impact of digital transformation on the management of the public sector amid the significant shifts in technological advancements. The findings discovered that virtual technologies beautify the talents of governmental institutions with the aid of increasing efficiency and effectiveness in public service transport, accordingly boosting residents' accept as true with inside the government. However, it additionally affords numerous demanding situations that impact political, cultural, administrative, and social domain names.

Key words: *Technological transformations; management; e-government; Public Organizations.*

Introduction:

Digitization is a necessity in all working fields including the administrative one, nowadays. The e-administration lessens the bureaucratic complexities that overburden the work of the civil departments. It improves the quality of the services done to the public. It also diminishes the time needed to achieve the administrative processes. In addition, it maintains accuracy and objectivity and makes the communication easier. Too, it remarkably reduces using paper. Thus, it helps overcome the problem of paper documents storing.

No doubt that public transactions is one of the areas that needs Digitization since it is of paramount importance. It improves the public service. It enhances

efficiency, transparency and equality. It saves time and effort. It secures greater opportunities for free and fair completion. Thus, it guarantees a fertile atmosphere that helps the public transactions realize the aims of the economic and social development.

In response to the digital revolution, the Algerian government has made great efforts to keep pace with it. It has digitized most of the local administration. It makes it available for the public administration, the citizens and entrepreneurs to do public transactions electronically, i. e., using the internet and technologies of media and communication.

The Algerian government has passed many laws, executive orders and presidential decrees to modernize the management of public transactions. The most prominent legislative effort in this area is issuing the presidential decree no. (15-247) in (2015) relating public transactions regulation and public facility empowerment. It aimed not only to update the public facility, but to enhance the public service as well. The current study seeks to explore and assess the characteristics of digitization of public transaction administration in view of the presidential decree no. (15-247) in (2015) relating public transactions regulation and public facility empowerment. Thus, the study's problem is set in the following question: What are the characteristics of digitization of public transaction administration in according to the presidential decree no. (15-247) in (2015) relating public transactions regulation and public facility empowerment? In light of this question, the objective of the study is to highlight the characteristics of digitization of public transaction administration in according to the presidential decree no. (15-247) in (2015) relating public transactions regulation and public facility empowerment. The study used the descriptive analytical approach. The study consists of three parts covering the e-advertisement, the e-portal and the e-auction. These points are going to be tackled in further detail in the following sections.

E-Advertising for Public Transactions

Digital technology has had a profound impact in the century we live in, with its use encompassing all aspects of society. This has made it a focal point for researchers, especially after the COVID-19 crisis, which changed many concepts, methods of governance, and service delivery within institutions and nations. These rapid technological advancements have significantly altered societal interactions and public sector service delivery. The shifts have presented essential challenges and opportunities to improve the efficiency and performance of governments and

administrations, especially in providing better services to citizens. As a result, countries worldwide have sought to adapt their systems and processes to benefit from digital technology's advantages, aiming to strengthen and rationalize various policies affecting society's developmental frameworks.

This study aims to explore the strategy of digital transformation in the public sector by examining the following question:

To what extent does digital transformation affect the nature of public sector management?

To answer this question, we start with the following hypothesis:

Digital transformation contributes to organizational and structural impacts on the public sector management system.

To answer the question, a descriptive-analytical approach was used. This approach attempted to analyze the most critical opportunities and challenges presented by the digital transition within public organizations.

THE FIRST TOPIC:

The Concept of Digital Transformation

First requirement: Definitions of Digital Transformation

Despite the global attention and focus on studying digital transformation and the efforts of researchers to delineate the topic precisely, there is no agreed-upon definition, and the criteria that may help identify the elements of digital transformation are unclear. Given the increasing importance of this subject, it is imperative to establish a framework for defining digital transformation within different contexts, especially in the public sector.

Digital transformation encompasses the alterations that arise from the implementation of digital technology. In contrast, digitization entails the conversion of analog information into a digital format and the automation of processes through the use of information technology. The term "transformation" denotes the capacity to undertake essential measures when institutions encounter novel technologies and should not be conflated with mere alteration. (Kraus et al., 2021, p. 04) Digital transformation and digitization include using digital technologies to modify or improve processes. However, digital transformation is more all-encompassing, resulting in more fundamental, significant, and intense

changes. Scholars agree that digital technologies are vital in driving digital transformation. (Yannis Charalabidis et al., 2022, p. 171).

Digital transformation is about embracing modern technology to maintain competitiveness in the Internet age. This includes offering services and products online in addition to the physical world. Providing services online enhances customization and automation. Digital transformation is defined as restructuring business models to meet customer needs using new technology. (Ines Mergel et al., 2019, p. 02).

Various definitions of digital transformation can be identified:

- Digital transformation means using new digital technologies like social media, mobile technology, data analytics, or integrated devices to make significant business changes, like better customer experiences, more efficient processes, or new business ways. (Fitzgerald, M., et al., 2014, p. 2).

- Digital transformation is when a company uses technology to significantly enhance its performance or significantly broaden the range of things it does. (Westerman et al., 2011, p. 5).

- Digital transformation is the effect of many new digital technologies on society. These technologies bring in new people, groups of people, structures, practices, values, and beliefs that change, threaten, replace, or add to existing rules in institutions, environments, industries, or areas. (Hinings et al., 2018, p. 53).

- Digital transformation is the sustainable integration of all economic sectors and the adaptation of actors to the new conditions of the digital economy. (Bondar S. et al., 2017, p. 33).

- Digital transformation is the process of all the changes that occur when digital technology is used in different parts of society. (Stolterman, E., & Fors, A. C., 2004, p. 689).

- Digital transformation involves using ICT for simple automation and creating new capabilities in business, public government, and individuals and society's lives. (Martin, A., 2008, p.130).

- Digital transformation is "a discontinuous or continuous change that starts with the adoption and use of digital technologies and subsequently leads to a comprehensive transformation within the organization in a tacit or incremental way to follow value creation". (Emily Henriette et al., 2016, p. 2).

The word "digital transformation" is frequently characterized and explained more comprehensively than other similar digital terms. Experts concur that digital transformation heavily relies on integrating digital technologies and organizational processes. The distinction between "digital transformation" and other phrases resides in the former's emphasis on organizational and social aspects. The word describes situations where firms make substantial changes to their business models and strategies, typically leading to the provision of novel consumer experiences. However, digital transformation affects a business's external and internal stakeholders. Therefore, digital transformation refers to substantial alterations in companies' or societies' service logic, structures, or values facilitated by digital technologies. (Yannis Charalabidis et al., 2022, p.174).

Second requirement: Defining digital transformation in the context of the public sector

Despite general pressures to increase efficiency and improve quality, government institutions also encounter specific demands to enhance digital transformation and provide electronic services. They must adapt to policies, legislation, and internal organizational structures. However, government entities navigate complex institutional challenges that make the digital transformation represented by e-government relatively unclear. It is worth mentioning that terms like e-government and transformational government are often used interchangeably, leading to blurred concepts.

Vial and Mergel observe significant variations in digital transformation structures. Vial's definition emphasizes altering value creation paths within an institution as a fundamental component. In contrast, Mergel and others view digital transformation as a comprehensive effort involving a review of core processes. (Ida Lindgren et al., 2023, p. 416).

According to Andriole, digital transformation is more than just new technologies or changes to the supply chain. It is a digital shock to systems that may be working fine now. Nwankpa and Datta say that digital transformation is when a company changes how it uses big data, analytics, mobile devices, and social media. Researchers think this change is a way of adapting to the fact that new tools are constantly changing. Others say it means a significant change in institutions that affects many areas, such as strategy, control, skills, processes, and culture. Digital technologies are a big part of digital change but are only one part of this complicated process. Institutions need to do more study and talk about it to stay competitive and live through this wave of constant digital change. However,

most of the meanings talk about how digital technology is used in businesses. (Eleonora Veglianti, 2023, p.12).

Regardless of the precise definition, there is a noticeable scarcity of research on digital transformation in the public sector and how government institutions manage their digital transformation processes. Recent studies indicate that digital transformation encompasses complex aspects in the public sector, such as creating a new organizational identity, which demands a complicated and conflicting effort. This very challenge prompts government officials and public organizations to embrace digital transformation. (Ida Lindgren et al., 2023, p. 416).

Within this framework, digital transformation involves reshaping organizations and societies by implementing digital technologies, which may be existing or emerging. Digital transformation often leads to evolving, improved, or even new business models, prompting organizations to re-evaluate and adjust their strategies. As such, it can alter entities at the organizational level and impact clients, thus explaining the proposition that it can bring about social change. (Yannis Charalabidis et al., 2022, p. 171).

In conclusion, a comprehensive definition of digital transformation in the context of the public sector can be formulated as follows: Digital transformation is a comprehensive effort to re-examine the fundamental processes and services of the government, going beyond conventional digitization endeavors. It is an ever-evolving process, starting with a shift from representative to digital forms, followed by a comprehensive review of current policies, processes, and user needs. This leads to a complete revision of existing digital services and the creation of new ones, emphasizing factors such as meeting user requirements, devising new service delivery formats, and expanding the user base.

Third requirement: Dimensions of Digital Transformation

As previously stated, digital transformation has a wide-ranging impact, and it is critical to highlight its important elements to comprehend better how this phenomenon evolves. These dimensions can be summarized as follows (Eleonora Veglianti, 2023, p. 11).

Competition: Competition and collaboration among institutions relate to how they interact. In the past, inter-institutional relationships were more straightforward, as they aimed to maintain a competitive edge and form mutually beneficial partnerships, such as supply chain providers distributing manufacturers' products to the market. Today, the norms have shifted; many industries are changing and have blurred boundaries compared to the past. This indicates that

competition has become less homogeneous than in previous decades. Therefore, institutions must adopt a more comprehensive perspective on competition during the digital transformation era. Moreover, institutions should consider entities within and outside their competitive environment. As Roger observes, digital transformation influences competition by radically altering the landscape of partners and rivals, leading to a more evolved understanding of competition with the emergence of new players.

Customer Base: Traditionally, customers are the target audience that institutions aim to reach with their marketing efforts to build loyalty for their products or services. This transformation shifts institutions' focus toward understanding customer behavior much more than before. Through digital technologies, customers can now significantly influence others and set trends that institutions must carefully monitor, especially those highly susceptible to customer satisfaction.

Digital technology has changed how customers and businesses talk to each other, putting much pressure on different parts of a company. Digital tools like search engines, mobile phones, and online services can help businesses find and interact with changing customers.

Data: How institutions are altering how they utilize and handle data is another crucial topic to consider in the digital transformation age. They are planning with more significant volumes of structured and unstructured data in a more methodical manner, which is a critical intangible resource for value generation.

Moreover, data is not isolated; cutting-edge analytical instruments distinguish it. Big data, for instance, makes it easier to plan and extract useful information from data. Institutions can use data to generate innovative ideas that improve their marketing strategy and create more accurate predictions. Data is an essential component for institutions in today's difficult climate since it is essential to creating value.

Innovation: Innovation is creating, developing, and implementing ideas. Inventions were frequently expensive and prone to failure in the past. On the other hand, innovative concepts may be generated more affordably, and digital technology can yield more significant results in the whole organizational learning route.

User Experience: Digital transformation prioritizes users as the focal point of an institution's strategy. Consequently, customers increasingly insist on higher

standards for the quality of products and services, and they anticipate enterprises will adjust to their evolving requirements promptly. Companies must adapt their methods of distributing products and services to match consumer trends. The digital transformation process usually starts with transforming marketing functions, mainly through adopting social CRM systems. However, the user experience is not limited solely to a company's external customers. It also includes internal users, i.e., employees who need technology to help them work more efficiently and productively. Finally, digital transformation creates new job opportunities by generating new work requirements, leading to emerging jobs such as Digital Manager and Influencer Marketing Manager. (Emily Henriette, et al., 2016, p. 03).

Value Proposition: The last aspect of digital transformation entails shifting from a relatively steady condition to a more flexible and adaptable approach. Institutions must stay abreast of this industry's technological changes to enhance their value offering and discern different opportunities and difficulties.

THE SECOND TOPIC:

The impact of digital transformation on the management of the public sector

First requirement: Reasons for the Growing Interest in Digital Transformation:

Digital transformation significantly impacts various groups within institutions striving to manage all related activities. In other words, staying abreast of an organization's digital transformation and charting its future course is scientifically and practically essential. The reasons for the growing interest in digital transformation can also be identified by examining its primary objectives, which can be categorized into economic and social goals.

Economic objectives encompass the adoption of novel business models, the advancement of innovative features in business operations, the augmentation of value generation, the enhancement of productivity, the generation of employment opportunities, the establishment of a modernized regulatory framework, the evaluation of technical components, and the reconsideration of outdated standards within various institutional contexts. Social goals involve cultivating a more cooperative organizational culture, advancing the acquisition of new skills and abilities, implementing novel methods in the education system to improve comprehension of the digital realm, and establishing a fresh infrastructure for

disseminating innovative services. Furthermore, there is potential for enhancing data protection and privacy and improving transparency. (Eleonora Veglianti, 2023, p. 9).

The implications of digital transformation on government and public organizations can be observed through several different lenses (Yannis Charalabidis et al., 2022, p. 177).

Firstly, these organizations are characterized by complex relationships involving various government branches, civil society representatives, citizens, and stakeholders. Contemporary societies also face intricate problems that demand concerted efforts to address them. Radical transformation can lead to shifts in power dynamics within these already complex organizations.

Furthermore, the objectives of government and public organizations, such as addressing significant social problems, improving the quality of community life, and promoting sustainable development, may lead to different best practices, factors contributing to success or failure, advantages, and challenges in digital transformation initiatives compared to those observed in the private sector.

Second requirement: The Importance of Digital Transformation in Public Service

Digital transformation brings about radical changes in the way organizations function and interact with their clients, and some of its most important results include: (Ines Mergel et al., 2019, pp. 2-3).

- Changing service delivery methods: Shifting from manual, traditional processes to digital technology to enhance efficiency and effectiveness.

- New forms of direct interaction with clients: Utilizing social media and other digital channels, allowing businesses to adapt to the evolving needs of their customers.

- Creating new business models: This involves integrating digital technology into all aspects of operations, including processes, products, and services.

Technology, thus, offers multiple benefits to public services. Digital transformation enhances service quality through the following means (Stephen Curtis, 2019, p. 02).

- Client empowerment: Distinguished online services should be provided at the client's preferred times, and we must understand how clients interact with

public services while maintaining access to other channels when needed. Access to all channels is especially crucial when assisting those in need.

- Staff empowerment: Encourage staff to think "outside the box," motivating them to explore new, more efficient ways of working and providing the necessary tools and support.

- Capable organization: Empower and support staff for continuous improvement, promote client-centric thinking, and focus on developing an organizational culture.

Overall, digital transformation programs focus on delivering new services and aim to create an environment ready for change. This requires: (Stephen Curtis, 2019, p. 02).

- Leaders who strive for renewal and innovation toward a specific goal;
- A culture centered on meeting client needs (purpose);
- A simple and practical approach to performance measurement, again focusing on continuous improvement;
- Developing an approach for continuous improvement and gradual progression based on client needs;
- Enhancing the skills and mindset of our staff to work in this new environment;
- Collaboration and partnerships with external partners;
- A culture that effectively shares information and data.

Changes to how government services are provided in the public sector are called "e-government." This term usually refers to making services more accessible and efficient rather than devising new business models. In the last twenty years, the idea of e-government has been studied extensively, and it has many meanings.

Rooks, Matzat, and Sadowski say that there are two types of meanings of e-government: broad and narrow. The broad definition is about using the internet and ICT (Information and Communications Technology) to give people information from the government. The narrow meaning is about using these technologies to provide people with services. In other definitions, the focus is on using ICT to engage with citizens. (Ines Mergel et al., 2019, pp. 2-3).

Regarding the impact of e-government on the public sector and its environment, we find a twofold effect. On the one hand, the benefits of e-

government lie in improving services and making them more efficient, which can lead to increased citizen trust in the government. On the other hand, it may also bring about radical changes in government functions, including its interaction with citizens, businesses, and civil society. Studies on the impact of e-government show that research primarily focuses on changes within the government and how technology improves operational efficiency, such as providing services online. However, they only sometimes address how e-government changes its goals and methods. Some experts argue that more than e-government is needed for real change. It must also focus on redesigning and improving governmental services to meet citizens' needs better. Additionally, e-government should concentrate on forging new relationships with citizens, businesses, and civil society. (Ines Mergel, et al., 2019, pp. 3-4).

This radical transformation of services is evident through innovative platforms and products and in addressing client needs. The transition from a paper-based to a digital government has gone through several phases, encouraged by shifts in public policy and ideological trends often related to public policy and public sector management. Nonetheless, we must acknowledge that most of these efforts have been transitional, moving offline administrative tasks to online digital services without rethinking the underlying service or process. (Ines Mergel, et al., 2019, pp. 2-3).

Finally, we can elaborate on some examples of the benefits that digital transformation offers: (Stephen Curtis, 2019, p. 01).

- More efficient processes (e.g., removing paper and manual data re-entry from operations);
- Better data providing insights into client behaviors and needs;
- Using information to reduce failure demand (a failure demand is an avoidable contact; in its simplest form, it could be a client calling to check if a request has been received, but it could also be a demand for costly services that could be avoided if intervened earlier);
- Improved online services;
- These fundamental improvements can support strategies to enhance service accessibility, such as redesigning services to meet client needs better.

In addition to the technical aspects that can contribute to the enhancement process, these criteria highlight the importance of developing services prioritizing the client and user experience. However, it is worth noting that these criteria need

to guide a cross-enterprise approach that focuses on meeting client needs more comprehensively.

Third requirement: Utilizing technology to revolutionize the culture and interactions between organizations and citizens

Digital transformation entails a significant shift in how organizations are managed and is sometimes described as a technology revolution. Technological advancements outside the public sector are revolutionizing citizens' expectations of governments' capacity to provide top-notch digital services. Nevertheless, digital transformation is predominantly perceived as a cultural shift that must take place within the organization. Thus, research needs more comprehensive information on the organization of this revolutionary transition. (Ines Mergel et al., 2019, p. 3)

In this situation, public governments know how important it is to improve service delivery and make things run more smoothly to reach goals like greater openness, honesty, and participation. The way that public governments work, talk to each other, and provide services can change when they use digital tools. On the other hand, it can have a much more significant effect, like changing an institution's structure and attitude or getting citizens and other partners involved in how public services are planned and delivered. A critical part of e-government is changing how relationships with citizens and other parties work. This shows that the citizen's role increases when an electronic governance system is used. Citizens and stakeholders outside the institution are considered partners in producing services rather than merely consumers of services. In this context, Luna-Reyes analyzes how technologies are made available for the inclusive participation of citizens through the creation of online donation platforms or social media. In addition, some other forms of research focus on the impact of e-governance on democracy and representation. (Ines Mergel et al., 2019, p. 3).

In the same vein, digital transformation affects value creation. Berman suggests that digital transformation will change the stereotypical business model, characterized by hyper-connectivity and collaboration between consumers and organizations. Regarding administrative processes, digital technology can assist organizations in supporting administrative processes such as inter-departmental coordination. Nogrsek and Vintar support this view, finding that information technology (IT) techniques can cause change at multiple levels, such as institutional culture or structures.

Bannister and Connolly note that adopting information technology in governmental organizations can shift the values on which these organizations are

founded. On the other hand, Cordella and Paletti believe that information technology has the potential to enable collaboration, resulting in new ways for citizens and stakeholders to contribute to value creation. (Ines Mergel et al., 2019, p. 3).

THE THIRD TOPIC

The Opportunities and Challenges of Digital Transformation in the Public Sector

First requirement: Obstacles to Digital Transformation

Some studies have been done on the problems that make it hard for the public sector to go digital. Wilson and Merrell looked at the US public sector. They found two main types of problems: structural obstacles, which include government, capabilities, and resources, and cultural obstacles, such as organizations' internal cultures needing to be made aware of problems. (Ida Lindgren et al., 2023, p. 417).

Tanguy and his colleagues studied the Italian public sector and found organizational and cultural barriers. The organizational barriers included a need for more political will, support from senior management, and coordination between departments. The cultural barriers included a bureaucratic culture and employees who wanted to stay the same because they feared losing their jobs or control. In a separate study done in Sweden, Magnusson and his colleagues said that problems with how the public sector is governed when it comes to going digital were to blame. (Ida Lindgren et al., 2023, p. 417).

The following are critical obstacles associated with digital transformation in the public sector (Pratim Datta, 2020, p. 11).

- The digital transformation project for public administration is complex due to its scale and complexity. This complexity arises from a mix of political loyalties and cultural traditions, with each person, region, and culture having its specific orientation. Thus, public administration becomes a complex fabric of conflicting viewpoints and beliefs.

- Political instability poses an additional challenge to digital transformation in the public sector. Projects related to digital transformation must be adaptable to rapid political changes. A shift in political leadership can lead to project goals, policies, or personnel changes. Therefore, public sector projects linked to digital transformation must be flexible and adaptable.

- Digital illiteracy: Departments and states with a digital skills gap hinder the success of a digital transformation strategy. This is evident in users and employees who need support in adopting digital solutions, resulting in the proliferation of bureaucracy at various levels.

- Material obstacles: There is a substantial requirement for tangible resources to facilitate the provision of information technology, particularly at the state level. This technology is continually growing, making it challenging to keep up with the latest innovations, and its networked and integrated nature makes it impossible to implement it gradually.

- Resistance to change: Undertaking a digital transformation project entails numerous changes in organizations, departments, and sections, as well as redistribution of tasks and authorities. This, in turn, requires changes in administrative leadership and job positions, often leading to resistance.

- Legislation and laws: Establishing an electronic administration requires enacting legislation and legal amendments to enable the administration to optimize the use of all the institution's resources. However, there are potential delays due to routine procedures. (Mohamed Attia Al-Farhati and others, 2021, p. 842).

Second requirement: Challenges for a Successful Digital Transformation in the Public Sector

Osmundsen and colleagues discussed several essential things that must be done for digital transformation to go well. These include an open and supportive workplace culture, well-run processes, and commitment from both managers and workers. On the other hand, Escobar and his colleagues looked into eight success factors that affected both people (like being aware of teams and having digital skills) and businesses (like having multi-level governance, management structures, and changes in organizational Structures). (Ida Lindgren et al., 2023, p. 416).

In this situation, Vial suggests a complete way of thinking about digital change that looks at its parts, such as how enabling factors and constraints affect it. Vial talks about digital transformation as a process that starts with how technologies are constantly changing, causing businesses to adapt and change how they make money to stay competitive. These reactions and changes may be limited by organizational problems or made possible by changes to the structure, which can have good or bad results.

Vial grouped the factors that could facilitate transformation under "structural changes", which affect the institution's evolution and are deemed necessary for

digital transformation. These changes include the institution's structure, such as inter-departmental collaboration, organizational culture, and innovation; influential leadership in promoting digital thinking; and reorienting employees to take on new roles and develop new skills. (Ida Lindgren et al., 2023, p. 416).

Right now, institutions in the public sector need to change in order to accept digital transformation. For implementation to work well, there needs to be a clear strategy, resources, a consistent way of leading, and the involvement of human capital within the company. This is especially important as the economy moves toward being more digital. The emergence of new technologies will impact every organization and employees' work-life balance. Therefore, the digital transformation strategy must be based on the following: (Eleonora Veglianti, 2023, p. 9).

- Institutions must review their relationships with stakeholders and clients, as their dynamic participation influences their success.

- Effective data utilization: Digital transformation impacts how institutions use data. Previously, obtaining, storing, managing, and utilizing data was challenging, and institutions often created multiple databases to use diverse data differently. Taking full advantage of data requires dedicated systems and analytics to extract the correct information. Some data storage techniques are becoming more affordable and accessible to many institutions across various fields. However, this vast amount of data must be processed to obtain the necessary information for managing operations and achieving goals.

- Additionally, there is a need to focus on digital maturity, which refers to the progress made in developing a system, such as an institution. Public institutions can attain digital maturity through organized digital transformation. Digital maturity is more than just technology application; it also involves appreciating digital advancements within the institution, such as changes in products or services, culture, and processes. This perspective highlights the importance of considering both the technology and management sides. Institutions must navigate a complex and unstable environment influenced by solid and unstable conditions. Digital transformation opens up a constantly evolving new scenario. Moreover, digital maturity underscores the necessity of adopting an integrated approach encompassing both the technological and administrative sides. It offers a more comprehensive interpretation of the full role of technologies; information flows within the institution, and the need for changes in its management. A study by Deloitte identified three levels of maturity regarding governmental digital

transformation while recognizing five factors shaping the path of digital transformation: strategy, leadership, workforce skills, digital culture, and user focus. (Panagiotis Kokkinakos et al., 2016, p. 99).

- Research indicates that leadership is essential for digital transformation. A lack of managerial commitment, participation, and ownership can lead to resource shortages and weak decision-making, creating further barriers. It is crucial to implement an intelligent working environment within the organization. Leaders can foster a sense of community within the organizational structure, leading to higher levels of trust, one of the principles of intelligent working. Leadership is necessary to ensure that change is directed correctly and to develop a new community. Unlike traditional hierarchical leadership styles, which require the development of specific guidelines to achieve desired outcomes, new work methods encourage leaders to focus more on relationships based on collaboration and knowledge-sharing among organization members. This also aligns with creating a teamwork environment, allowing more employee empowerment to achieve desired goals more independently. In this context, the concept of intelligent leadership emerges. According to Finkelstein and Jackson, visionary leaders are those who demonstrate their values and commit to responsibility towards organizational goals. Additionally, Singh proposed that astute leadership pertains to flexibility, creating an exciting and attractive vision, and motivating people to achieve it. It involves driving and harnessing people's talents, thus striking a balance between soft power (achieving goals through attraction and persuasion) and hard power (using rewards). (Eleonora Veglianti, 2023, p. 64).

- The availability of information and communication technologies is a prerequisite for ensuring the success of digital transformation, but more is needed. Decisions regarding the digital transformation process depend not only on the availability of technology but primarily on institutional processes that shape and regulate individuals' choices. Institutional changes in developing digital governments have led to revolutionary potential for improving public administrations by providing new platforms that bring about changes in delivering public services. The proposed institutional decisions aim to build a new relationship pattern between the government and society, impacting the structure of bureaucracy. Therefore, it is essential to formulate public policies that consider the challenges and changes in the structure and delivery of government services. The e-government strategy must consider potential obstacles to its implementation, including a risk-averse culture, legislative obstacles, the availability of resources to

support digital modernization, and the capacity of public institutions to handle process changes. (Fernando Filgueiras et al., 2019, pp. 3-4).

- Making the public sector more flexible so it can adapt to digital change: When an environment changes, dynamic capabilities are an organization's skills to spot and take advantage of chances, as well as to change and safeguard its assets, knowledge sources, and abilities in order to stay ahead of the competition. A lot of real-world studies have used dynamic capabilities as a way to look at digital change. To drive innovation and change in the public sector, the use of digital technologies widens the range of technical tasks needed. This means that new skills and organizational structures are needed. Once organizations know they need to change, they need to get the resources they need to carry out their plan using dynamic capabilities. Different from regular organizational change, digital transformation needs significant changes in how things are done, how they are structured, and how they are done. This is because of a few things (Ida Lindgren et al., 2023, p. 367).

➤ Renewing operational capabilities: Redesigning operational processes to be more effective and efficient.

➤ Developing new capabilities in political and administrative contexts includes policy formulation and implementation capabilities, change management, and innovation.

➤ Emphasizing leadership: Digital transformation requires strong leadership and clear direction.

➤ Building new organizational capabilities, Such as data analysis, collaboration, and continuous learning.

➤ Establish partnerships with the private sector and civil society.

➤ Developing organizational readiness: The ability of the organization to adapt to change.

Conclusion:

In conclusion, this study finds that digital transformation is revolutionary for management in public sector organizations. It contributes to organizational and structural impacts on their management nature, representing a fundamental shift in how governmental activities are organized and conducted. Various studies show that using digital technologies strengthens governmental institutions' organizational capabilities by improving efficiency, increasing transparency, and enhancing citizen engagement.

The utilization of digital technologies also contributes to the digitization of routine tasks, saving time and effort and making governmental information more accessible, thus boosting citizen trust in the government.

However, the digital transformation strategy in the public sector faces several obstacles and challenges that public sector organizations must overcome. These include cultural and bureaucratic barriers, resistance to change, a lack of digital capabilities, and political, legal, and social challenges. The success of this strategy hinges on effectively tackling these challenges.

Lastly, digital transformation is a powerful tool for enhancing the organizational and structural capabilities of public sector organizations. However, this requires directing efforts towards overcoming the various challenges they face, thereby improving governmental services and increasing effectiveness in implementing public policies.

The following are some recommendations that can assist public sector organizations in overcoming the challenges they face in the digital transformation process:

- Invest in training and development to raise digital awareness and acquire the necessary skills for digital transformation.
- Establish clear policies for implementing the digital transformation strategy in the public sector.
- Create an institutional culture that supports change and innovation.
- Governmental institutions should review their relationships with stakeholders from the private sector and civil society.
- Provide suitable leadership for the digital transformation process in the public sector.
- Successful digital transformation of public administration should be simple, accessible, and reachable to stimulate public awareness and interest.
- Dynamic capabilities are essential to understanding institutions' digital transformation capacity. Digital transformation should be understood as a comprehensive socio-technological challenge affecting staff, structures, tasks, and organizational procedures.
- Organizations must adapt to thrive in the digital age, requiring deep scientific thinking. This includes fostering a new work environment and effective

human resource management, with a focus on flexible, knowledge-based tasks rather than repetitive, organized activities.

References:

1. Al-Farhati Mohamed Attia et al. (2021). *Obstacles to digital transformation and the use of electronic management and management information systems in raising efficiency in public press organizations*. *Journal of Architecture, Arts and Humanities*. 6, (28).
2. Bondar S., et al. (2017). *Agile digital transformation of system-of-systems architecture models using Zachman framework*. *Journal of Industrial Information Integration*. 7, 33–43.
3. Emily Henriette, et al. (2016). *Digital transformation challenges*. MCIS 2016: 10th Mediterranean Conference on Information Systems. Paphos. Cyprus.
4. Fernando Filgueiras et al., (2019). *Digital Transformation and Public Services Delivery in Brazil*. *Latin American Policy*. 10, (2), 195-219.
5. Fitzgerald, A., et al. (2014). *Embracing digital technology: a new strategic imperative*. *MIT Sloan Manag. Rev.* 55, (2).
6. Hinings Bob et al (2018). *Digital Innovation and Transformation: An Institutional Perspective*. *Information and Organization*. 28, (1), 52–61.
7. Ines Mergel, et al., (2019), *Defining digital transformation: Results from expert interviews*, *Government Information Quarterly*. 4, (36).
8. Lindgren, I., et al. (2023). *Electronic government*. Springer Nature Switzerland.
9. Martin, A. (2008). *Digital Literacy and the “Digital Society”*. In C. Lankshear, & M. Knobel (Eds.), *Digital Literacies: Concepts, Policies, and Practices*. New York: Peter Lang.
10. Panagiotis Kokkinakos et al. (2016). *Digital Transformation and Global Society*. Springer Nature. Switzerland.
11. Pratim Datta, et al., (2020). *Digital transformation: Learning from Italy’s public administration*, *Journal of Information Technology Teaching Cases*. 10, (2), 1–18.
12. Sascha Kraus et al. (2021). *Digital Transformation: An Overview of the Current State of the Art of Research*. Sage journals. 11, (03).
13. Stephen Curtis. (2019). *Digital transformation—the silver bullet to public service improvement?*, *Public Money & Management*. 39, (25).
14. Stolterman, E., Fors, A.C. (2004). *Information technology and the good life*. In: *Information Systems Research*. Springer.
15. Veglianti, E. (2023). *Working environment and digital transformation challenges for the public sector*. Springer Nature Switzerland.
16. Weserman, G et al. (2011). *Digital Transformation: a roadmap for billion-dollar organizations*. *MIT Cent. Digit. Bus. Capgemini Consult.* (1), 1–68.
17. Yannis Charalabidis et al. (2022). *Scientific Foundations of Digital Governance and Transformation Concepts, Approaches and Challenges*. Springer Nature. Switzerland.

