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## GRADUATE DISSERTATION

Presentation with view to obtaining an academic master's degree in the specialty  
« E-gouvernement »

**The digitization of public procurements in Algeria**

**Case : Finance Ministry**

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## **Abstract**

The digitalization of public procurement aims to modernize awarding processes using information and communication technologies. In Algeria, the Ministry of Finance is leading a project to digitize public procurement. The main aim of this work is to identify the improvements needed to the digital procurement process in Algeria, particularly within public establishments. To achieve this, we adopted a qualitative approach, including interviews with various stakeholders. Our research has enabled us to gain a better understanding of the current functioning of the public procurement process in Algeria. We also clarified the requirements needed to develop an approach aimed at digitizing the entire process, from the purchase request to the completion of the public contract. With this in mind, we have drawn up a detailed action plan covering the operational and legal aspects for effective implementation of digitalization. This plan includes precise steps for implementing digitalization, with the emphasis on improving the efficiency, transparency and security of electronic transactions. In sum, our study highlights the needs and challenges of digitizing public procurement in Algeria, and proposes practical solutions to facilitate this digital transformation, which is essential for modernizing administrative procedures and strengthening confidence in public transactions.

**keywords :** Digitalization, public procurements, electronic transaction.

## **Résumé**

La numérisation des marchés publics vise à moderniser les processus d'attribution en utilisant les technologies de l'information et de la communication. En Algérie, le ministère des Finances mène un projet de numérisation des marchés publics. L'objectif principal de ce travail est d'identifier les améliorations à apporter au processus de numérisation des marchés publics en Algérie, notamment au sein des établissements publics. Pour ce faire, nous avons adopté une approche qualitative, incluant des entretiens avec différentes parties prenantes. Notre recherche nous a permis de mieux comprendre le fonctionnement actuel du processus de passation des marchés publics en Algérie. Nous avons également clarifié les besoins nécessaires au développement d'une approche visant à numériser l'ensemble du processus, de la demande d'achat à la réalisation du marché public. Dans cette optique, nous avons élaboré un plan d'action détaillé couvrant les aspects opérationnels et juridiques pour une mise en œuvre efficace de la numérisation. Ce plan comprend des étapes précises pour la mise en œuvre de la numérisation, en mettant l'accent sur l'amélioration de l'efficacité, de la transparence et de la sécurité des transactions électroniques. En somme, notre étude met en évidence les besoins et les défis de la numérisation des marchés publics en Algérie, et propose des solutions pratiques pour faciliter cette transformation numérique, qui est essentielle pour moderniser les procédures administratives et renforcer la confiance dans les transactions publiques.

**Mots clés :** Numérisation, marchés publics, transactions électroniques

## ملخص

تهدف رقمنة الصفقات العمومية إلى تحديث عمليات منح العقود باستخدام تكنولوجيا المعلومات والاتصالات. وفي الجزائر، تقود وزارة المالية مشروعاً لرقمنة الصفقات العمومية. والهدف الرئيسي من هذا العمل هو تحديد التحسينات اللازمة لعملية رقمنة الصفقات العمومية، لا سيما داخل المؤسسات العامة. ولتحقيق ذلك، اعتمدنا نهجاً نوعياً، بما في ذلك إجراء مقابلات مع مختلف الأطراف. وقد مكنا بحثنا من اكتساب فهم أفضل للأداء الحالي لعملية الصفقات العمومية في الجزائر. كما أوضحنا أيضاً المتطلبات اللازمة لتطوير نهج يهدف إلى رقمنة العملية بأكملها، بدءاً من طلب الصفقة، وحتى إتمام الصفقة العامة. ومع وضع ذلك في الاعتبار، وضعنا خطة عمل مفصلة تغطي الجوانب التشغيلية والقانونية للتنفيذ الفعال للرقمنة. تتضمن هذه الخطة خطوات دقيقة لتنفيذ الرقمنة، مع التركيز على تحسين كفاءة وشفافية وأمن المعاملات الإلكترونية. وخلصنا القول، تسلط دراستنا الضوء على احتياجات وتحديات رقمنة الصفقات العمومية في الجزائر، وتقتترح حلولاً عملية لتسهيل هذا التحول الرقمي الذي يعد ضرورياً لتحديث الإجراءات الإدارية وتعزيز الثقة في المعاملات العامة.

الكلمات المفتاحية: الرقمنة، الصفقات العمومية، المعاملات الإلكترونية

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# **Introduction**

## **Introduction**

Public procurement plays a pivotal role in the economic and social fabric of a country for two key reasons. Firstly, it ensures that public services align with the general interest by efficiently addressing societal needs. Secondly, public procurement is a strategic tool for public authorities to influence industrial, employment, and research and development policies. This approach is deeply rooted in modern macroeconomics, which emphasizes the potential of well-managed public spending to boost the economy and stimulate growth. Public procurement can effectively guide and redirect economic activity, constituting approximately 12% of the Gross Domestic Product (GDP) in OECD countries.

A public procurement contract, as defined in Law n°23-12 of August 5, 2023, regulating public procurement and public service delegations, is a written agreement with economic operators in return for valuable consideration. These contracts are designed to meet the contracting authority's needs in terms of works, supplies, services, and studies, following the stipulations of the law.

In today's rapidly evolving economic and social environment, New Information and Communication Technologies (NICT) play a crucial role. These technologies are transformative, impacting all sectors by accelerating the flow of information and generating significant added value. Prioritizing NICT has become a key growth driver in the world's most developed economies, fostering wealth creation and competitiveness. The digital revolution and the advancement of human capital are now central to economic and social progress, equipping countries to face the challenges of globalization.

The modernization of the economy hinges on the swift adoption of digital technologies across all sectors of society, including government, businesses, and citizens, accompanied by a strong focus on intellectual capital development. In this fast-changing landscape, public authorities are striving to incorporate these advancements through initiatives such as e-administration or e-government. These initiatives aim to link the information systems of administrations, local authorities, businesses, and households to the internet, enhancing the efficiency and accessibility of public services.

A key component of NICT is **digitization**, which involves replacing paper-based documents with digital files, thus paving the way for a "paperless office." The widespread adoption of

these technologies in the Algerian public administration is now a reality and has been embedded in the government's Action Plan. Implementing this strategy is expected to profoundly transform the structure and operations of public administration by streamlining procedures and improving the delivery of services to both citizens and businesses through a variety of online services.

One of the critical goals of this digital transformation is the development of **e-procurement**, an online service that facilitates public procurement processes for businesses. This objective is part of a broader strategy aimed at modernizing and streamlining public administration to make it more efficient and responsive to stakeholder needs.

Given this context, the main challenge of this research can be articulated as follows: **What are the objectives of digitizing public procurement in Algeria, and what progress has been made?**

From this central question, three sub-questions emerge:

- **Can Algeria transition to a fully electronic public procurement system?**
- **What changes will digitization bring to the legal framework governing public procurement?**
- **What is the current legal framework for public procurement in Algeria, and what conditions must be met for a successful digitization project?**

To address these issues and respond to the main research question, this thesis is organized into three chapters:

- **Chapter I:** This chapter lays the theoretical foundation for our research, examining the key concepts of digitization and public procurement.
- **Chapter II:** This chapter presents the methodology used in this study and introduces our host organization, providing a practical context for the research.
- **Chapter III:** This chapter outlines a detailed action plan for the successful implementation of a public procurement digitization project, exploring the strategies and concepts we propose to apply.

# **CHAPTER 1 : THEORETICAL FRAMEWORK**

## **Section 1: Literature review:**

The digitization of public procurement has become a major challenge for the governments. It is a well-known fact that managing calls for tenders using modern technology may boost competitiveness, save administrative expenses, give more transparency and expand access to information.

### **1.1 Government Procurement:**

Public procurement has a long history that stretches back to antiquity, but its modern evolution began in the 19th century with the emergence of the Nation-state and the need for governments to provide public services such as building public infrastructure, supplying water, providing electricity and delivering social services.

Over time, the governments began to use the public procurement to purchase goods and services to satisfy their needs, including office supplies, vehicles, construction, ect. (Linditch, 2016).

Public procurement enables the provision of essential services and infrastructure to citizens and ensures the smooth running of the public sector. Governments are increasingly using public procurement as a lever to achieve strategic objectives, including improving the efficiency of public services, while also taking into account budgetary pressures (OECD, 2018).

According to the literature, public procurement can also be defined as mechanisms for the purchase of goods and services by public authorities, with the aim of satisfying citizens' needs and meeting their expectations in terms of quality, price and delivery times.

Public procurement can be used for projects of all sizes, from small contracts for the purchase of routine supplies to major construction projects or the provision of public services. (LICHÈRE, 2020)

In the 1970s, public procurement began to be described in the context of international trade agreements. In 1979, the first agreement on government procurement, also known as the Tokyo Round Government Procurement Code, was signed by several countries as part of the GATT trade negotiations. This agreement established rules for the purchase of goods and services by governments, including rules on transparency, non-discrimination and competition. (Commerce, 2021)

We can consider public procurement contracts to be contracts concluded between a public purchaser and one or more (public or private) suppliers (also known as tenders), with a view to acquiring goods, services or construction work. also known as bidders), with a view to acquiring goods, services or work. They are subject to a set of rules and procedures designed to guarantee transparency, impartiality and equal and equal opportunity for all bidders.

## **1.2 The digitalization of public services:**

The digitization of services intrinsically implies modifying and facilitating the way in which they are delivered in line with rapid technological progress. This requires the development of dynamic work systems capable of constantly updating and adapting to the changing nature of societies and labor markets in terms of ideas and behaviors, both for individuals and for different work sectors.

Governments are now forced to adopt a modern administrative attitude that places an emphasis on innovation and continual improvement rather than continuing to operate under the same old work patterns. Governments must do this in order to carry out their duties efficiently, fulfill the demands of national development, advance social and economic advancement, and raise the standard of living in their communities.

**Moksit Idriss(2020)** has carried a study about Determinants of e-government users satisfaction. According to the study he says the ultimate goal of the e-gouv system is the achievement of success in relation to the objectives of its implementation, a success that depends primarily on the degree of acceptance and satisfaction of current and potential users of the system. Consequently, it is necessary to measure the determinants of user satisfaction to facilitate user acceptance of the system.

**Andrea Terlizzi (2021)** has carried a study about "The Digitalization of the Public Sector: A Systematic Literature Review" provides a comprehensive overview of digitalization in the public sector, merging academic and non-academic research on digital government within public policy, administration, management, and welfare studies. The study delves into key themes such as defining public sector digitalization, exploring the advantages of digital government strategies, conditions for their success or failure, and the determinants and impact of digital government. Terlizzi highlights the evolution of digital technologies since the mid-

1980s, emphasizing the transformative impact of ICTs on government-citizen interactions and organizational dynamics. The article underscores the importance of understanding contemporary digitalization strategies and their implications for governments and society, pointing out theoretical and empirical gaps in the existing literature. By systematically reviewing 130 records, including academic articles, books, and key international publications, Terlizzi sheds light on the complexities and challenges of digital government, such as AI applications, coordination mechanisms, procurement strategies, and legal frameworks. The research also examines the advantages and challenges of digitalization, emphasizing the need to consider institutional, organizational, and cultural factors in the adoption of digital technologies. Moreover, the article identifies a lack of empirical research in the welfare studies domain, suggesting avenues for future research to enhance our understanding of digital government's impact across different sectors. Terlizzi's work contributes significantly to the discourse on digital transformation in the public sector, calling for a nuanced approach that integrates technical innovation with broader institutional and cultural considerations to drive effective digital government strategies and policies.

**MOHAMMED Belkacem Faiza, ZOUAGHI Samia et LEBBAZ Abdelkader (2020)** have carried out a study on the digitization of public administration in Algeria. Their study assessed Algeria's progress in digitization. According to the study, the State has made continuous efforts to improve services and simplify administrative procedures. To date, 265 online forms and 29 procedures have been launched, representing a total of (447) services and an estimated completion rate of 65.77% of the initial plan. A total of 587 institutional websites have been registered, including ministries and related bodies. Despite these efforts and the progress made, Algeria still lags behind its neighbors.

This is due, first and foremost, to the security crisis that plagued the country in the 90s. In addition to bureaucracy and cumbersome program implementation procedures, as well as the legal vacuum in the field of ICT and, finally, the ignorance of a certain category of citizens, which makes it difficult for the public administration to adapt to the demands of new technologies.

*Tableau 1 United Nations e-administration index ranking (2012 - 2018)*

Country	2012	2014	2016	2018
Denmark	-	-	-	1
Australia	-	-	-	2
South Korea	-	-	-	3
Tunisia	103	75	72	80
Morocco	120	82	85	110
Algeria	132	136	150	130

Source : Enquête du PNUD sur l'administration en ligne des Nations Unies 2012 - 2018

**Lounes Houda (2022)** in her study *A review of the digitalization of the public service in Algeria*. Indeed, public services have been set up as public monopolies. These can be public establishments operating a controlled monopoly or direct management by the government. As a result, the administration's examination is implied by the public service's systematic examination. In the investigation we were able to draw the conclusion from the analysis that the public service quality observatory, established in 2016, is still merely a consultation organization lacking the legal standing or power to carry out long-term public service quality policies. With a completion rate of less than 38%, the 2009-launched e-Algeria effort to digitize the administration has been abandoned.

Over a 13-year period, the State has accomplished a great deal. Specifically, its many public administrations have successfully implemented 350 online services, or 78% of the services originally outlined in the e-Algeria plan.

In addition, A Ministry of Digitization was established in June 2020 to facilitate the smooth transition to a digital state. 28 ministries had established digitization divisions that produced yearly action plans for digitalization even before the Ministry of Digitization was established. The only responsibility of the Ministry of Digitization is to keep an eye on and compile data regarding the execution of the plans that the ministries have created. In actuality, digitalization

planning is outside the purview of the Minister for digitalization's Executive Decree, as stated in the Official Journal (2020).

Each ministry chooses its own digital projects according to its financial resources; for example, the Ministry of Agriculture launched its 2019 digital plan under the direction of the Ministry of Posts and Telecommunications (Ministry of Agriculture, 2019). In accordance with the law, the ministry in charge of digital affairs is responsible for supervising, assisting or controlling the other administrations, in tandem with them, in implementing the digitization plan.

ABID Nabila, (2022), in her study on digital transformation and business performance the current state of digital transformation in Algeria. Indeed, since 2008, Algerian public organizations have embarked on digitization and modernization projects as part of the e-Algérie 2013 strategy. However, despite the efforts made as part of the e-Algérie 2013 strategy, the results achieved are insufficient in relation to Algeria's position on a global and regional scale. on a global and regional scale. The key indicators used to assess the level of digitization show that Algeria is lagging far behind other countries around the world, as illustrated by the following table:

*Tableau 2 Algeria's position in digital technologies compared with the rest of the world*

Index	Ranking
ICT Development Index	102/176
The e-government development index	130/193
Digital Agility Index (DAI)	93 /176
Digital Maturity Index	117/139
Cyber Security Indicator	114/139

Source : ABID, (2022)

### **1.3 The digitalization of public procurement**

Numerous studies have been carried out on the subject of public procurement, indicating its importance for all countries in the world. In fact, the subject has been approached from a number of different angles. Public procurement is big business, as international organizations and governments at national, regional, state and municipal levels are the main purchasers of goods and services Sue Arrowsmith and Keith Hartley (2002).

Wadan Bou Abdallah, A. Merkan Mohamed El Bachir (2015), has carried out a study about ‘the Public procurement portal towards better public service optimization in the framework of e-administration’, by conducting this research, the scholars attempted to tackle the aspects of public service enhancement that match with the demands of e-administration, leveraging the latter to formulate and encapsulate the Algerian government's strategy for public service reform and enhancement. By using a wider range of information and communication technologies to present and facilitate the provision of public services through websites and portals, e-administration includes the digitization of all administrative and service works that occur between public administrations among themselves as well as between public administrations, citizens, economic operators, and even foreigners.

The digitization of public procurement is currently seen as an essential and necessary step in the modernization of the public procurement process. Its main aim is to increase transparency and rationality in the management of public funds. The digital transformation of the latter will probably be seen as the main project for the future and represents a major challenge for the AIT YOUCEF Salem (2020) nations.

#### **1.3.1 The digitalization of public procurement in the world:**

**Zaidi Abdellah (2023)**, has carried out a study about the public procurement management in Morocco has undergone significant regulatory changes aimed at modernization and performance improvement. Indeed, in the face of resource scarcity and growing needs, the Moroccan administration is urged to optimize its public expenditures to streamline the management of public markets. These markets, as a fundamental tool through which the State implements its policies, have undergone a significant regulatory dynamic in terms of norms and practices. This dynamic is evident through legislative reforms, continually evolving to adapt to multiple changes in economic, political, and social contexts. This regulatory overhaul, driven by the State's desire to promote transparency and efficiency, maintains a strong focus

on digitization, reliability, the establishment of competitive procedures in the market attribution process, and the development of a modern, efficient, and more effective public market system. The public procurement digitization program is structured around three key stages: the State Procurement Portal, the Public Procurement Database and electronic group purchasing. In the same time the government reinforced and strengthened the legislation of public procurement by adding many new laws such Decree no. 2.21.801 of March 11, 2021 amending and supplementing decree no. 2-12-349 on public contracts.

**EGOROVA Maria, ANDREEVA Luibov, ANDREEV Vladimir, TSINDELIANI Imeda and KIKAVETS Vitaly (2021)** led a study on the digitization of public procurement

In the Russian Federation, researchers employed the case study method to evaluate the effectiveness of digital transformation tools in public procurement, comparing them with international practices. Russia stands out as one of the early adopters of electronic auctions, commencing this practice on January 1, 2019. The digitization efforts extend beyond auctions to encompass various tender types such as open tenders, limited participation tenders, two-stage tenders, auctions, and public tenders, aligning with the European model of public procurement reform. It's noteworthy that while the electronic auction procedure was also used in the EU around the same period, it was more commonly used as a procurement method rather than a formalized procedure as observed in Russia.

**AIT YOUCEF Salim (2020)** has carried out a study on the digitization of public procurement in Algeria. According to this study, the Algerian legislator has begun the process of dematerializing public procurement through the introduction of two key measures, the first of which is electronic communication (electronic public procurement portal), first introduced by Article 137 of Presidential Decree No. 10- 236 of October 7, 2010 regulating public procurement. The second measure concerns the exchange of information by electronic means, based on an analysis of the functionality of the electronic public procurement portal. We can easily deduce that the Algerian legislator intends to make it the sole channel for electronic information exchange between contracting departments and economic operators. Despite the efforts of the Algerian legislator, the electronic awarding of public contracts in Algeria has not seen the light of day, due in particular to the constraint of securing information exchanges by electronic means.

It emphasizes the importance of electronic exchanges of information between contracting services and economic operators to enhance transparency, integrity, and efficiency in procurement. The legislation in Algeria mandates that all information exchanges in public procurement should occur exclusively through the electronic portal. Access to these functionalities is contingent upon registration on the portal. The document also highlights the crucial aspect of securing electronic information exchanges, stressing the need to address this constraint effectively. It delves into the necessity of modernizing public procurement through electronic means to improve efficiency, transparency, and competition. Furthermore, it touches on the challenges related to securing electronic information exchanges and how the Algerian legislation centralizes data security aspects within the electronic portal. The influence of international bodies like the OECD in recommending the integration of electronic auction systems in public procurement processes is also discussed.

## **Section 2 : CONCEPTUAL FRAMEWORK**

This section describes the main concepts of our research on the subject of digitization of public procurement.

### **2.1 Public procurement:**

Public procurement contracts are written contracts concluded, for consideration, by the public purchaser called the "contracting authority", with one or more economic operators called "co-contracting partners", to meet the needs of the contracting authority in terms of works, supplies, services and studies, under the conditions laid down by the present law and by the legislation and regulations in force. Article number 2 of Law n° 23-12 of 18 Muharram 1445 corresponding to August 5, 2023, setting out the general rules governing public procurement.

In simplified words, public procurement is the acquisition of works, supplies, or services by government or public organizations from the market or another outside body, while simultaneously creating and safeguarding public value from the perspective of their own organization.

Therefore, public procurement, which mobilizes and commits vast financial resources, looks to be a critical tool for the country's economic and social growth.

Due to its intricate nature, public procurement is overseen by a collection of legislative and regulatory texts, alongside diverse rules and procedures that are applicable to all participants involved in the procurement procedure.

Public procurement refers to the formal agreements established between a governing body and external entities such as service providers or suppliers. These agreements encompass a wide range of transactions including the provision of services, goods, or research. The primary objective of public procurement is to facilitate the efficient and fair allocation of public resources. The public markets are subject to strong rules regarding transparency, competition, and equal treatment of candidates. The process of passing public markets typically includes the publishing of an offer call, the submission of offers by candidates, the evaluation of offers, and the selection of the candidate chosen to carry out the market. Price might be included in the selection criteria.

### **Participants in the public procurement process**

We designate by the term involved in the award of public procurement contracts:

According to article 09 of the public procurement law 23-12, public entities governed by the public procurement law, referred to as contracting services, consist of the following:

- Public institutions and administrations.
- local authorities.
- public establishments governed by public law.
- public establishments and economic public enterprises acting as delegated contracting authorities, entrusted with this mission by the State or by local authorities.
- public establishments, subject to commercial rules, for the realization of an operation financed directly, in whole or in part, from the State budget or the budget of local authorities.

### **Contracting partner:**

The contracting partner may be one or several physical or moral people who commit themselves to the contract, either individually or within a group of companies. It is also possible for the contracting partner to be either an Algerian or a foreign company.

## **Type of Public Procurement:**

According to law n 23-12 that was published in the official journal the 18th Muharram 1445 corresponding to August 5th,2023 setting out the general rules governing public procurement there is four types of procurement:

- 1-Construction contracts: contracts to carry out any building or civil engineering work at the request of a public entity acting as project owner
2. Supply contracts: these are contracts concluded for the purchase of goods such as equipment, office supplies, medical supplies, etc.
- 3-Procurement of studies: The purpose is to provide intellectual services, such as Preliminary, diagnostic or sketch studies, site supervision and acceptance of work, Project studies.
4. Service contracts: these are contracts concluded for the provision of services such as cleaning services, maintenance services, consulting services training services, etc.

### **2.1.1 Fundamental principles of public procurement:**

a number of measurement and principles were already made to achieve the aim of guaranteeing the proper award of public procurement by article 05 of public procurement law 23-12 to ensure the efficiency of public procurement and the proper use of public funds, and systematically taking the public interest into account:

- freedom of access to public procurement;
- equal treatment of candidates;
- transparency of procedures.

As a result, these principles are essential elements in the creation of an environment that is highly appropriate and conducive to fair competition between the various economic partners. Essentially, the awarding of public contracts should under no circumstances escape the requirements laid down by the regulations, such as:

- legal certainty.
- the preservation of socio-economic interests.

This commitment reflects the public authorities' determination to enhance economic development and stimulate innovation.

➤ **freedom of access to public procurement**

This principle is based on the right of any economic operator with an interest to bid for public contracts without hindrance or obstacle.

On this point, the contracting authority must refrain from taking any measures designed to give preference to an economic operator under the pretext of an exception or derogation, and this also applies to any unilateral initiative on the part of the administration tending to adopt new rules not provided for by law and whose purpose is to restrict participation or eligibility for public procurement.

In all cases, it is forbidden to exclude a candidate who meets all the conditions required by the regulations governing public procurement. In addition, the regulations grant all operators the right to free access to documentation relating to the award of the contract, from the publication of the invitation to tender or consultation to the award of the contract.

Moreover, under article 9 of law no. 06-01 of February 20, 2006, on preventing and combating corruption, "public procurement procedures must be based on transparency, fair competition and objective criteria". In this respect, the contracting authority is obliged to:

- Disseminate information on public procurement procedures.
- Establish in advance the conditions for participation and the selection of objective and precise criteria for making decisions concerning the awarding of public contracts.
- Exercise all means of recourse in the event of non-compliance with public procurement rules.

➤ **Equal treatment of candidates :**

This principle is based on the fact that the contracting authority must ensure that operators and bidders for a public order have fair access without discrimination or favoritism. It is therefore very important that advertising and competitive bidding procedures are designed to be impartial with regard to all participants in the call for tenders.

This principle is put into practice by implementing a series of procedures that can be summarized as follows:

- Allowing free access to information through transparent and simultaneous advertising for the benefit of all candidates and bidders for public contracts, without exception or favoritism; similarly, bidding documents must be made available to all competitors before the expiry of the deadline.

-The selection of the contractor must meet exactly the criteria defined in advance in the specifications, and for this the award of the contract will be made in accordance with the procedures laid down by the regulations in force.

- Grant unsuccessful bidders the right of appeal to contest the provisional award notice issued by the contracting department in favour of one of the competitors.

-The evaluation of bids by the contracting authority must comply with the criterion of objectivity, and during the processing of bids it has full prerogatives to ask bidders for all necessary clarifications concerning their bids.

#### ➤ **Transparent procedures**

This principle consists of disseminating all necessary information relating to the public procurement procedure, in order to enable economic operators to have free and unhindered access to the public procurement process at the appropriate time.

It should be remembered that this principle applies to all stages of the procedure, from the announcement of the call for tenders to the award of the contract.

These provisions, although not exhaustive, include:

-The announcement of all contracts executed in the preceding fiscal year, together with the names of the firms or groups of companies that were granted the contract, published at the start of each fiscal year.

- The release of the preliminary program of projects to be initiated during the year in question at the start of each fiscal year.

-The request for bids will be announced (published in the press, on posters, on the operator's website, or in the public operator's official contract bulletin).

- The availability of documents (specifications, bidder instructions, contracting partner selection criteria, etc.) that include information helpful for the research, bid preparation, and tender sending.

- Definition of the bid opening day and time.

- Fixing the date and place for bid submission.

- Determining the date, time and place of bid opening.
- Matching of bid submission and opening dates.
- Participation of the public and bidders in the opening of bids.
- Award of contracts on the basis of selection criteria and according to a methodology defined in the specifications.
- Publication of the provisional contract award notice.
- The existence of appeal procedures (pre-contractual appeal).
- Reasons for rejecting bids.
- Prior and precise definition of requirements.
- Compliance with advertising requirements.
- competitive bidding.

➤ **The concept of the most economically advantageous offer:**

The concept of the most economically advantageous offer is taken to mean the offer that will give the best overall result and guarantee the contracting authority the best value for money. This concept must be seen in the context of a more global economic evaluation, which means that the criterion of the cheapest price is not always the rule to be followed, and for this reason the contracting authority is expected to take into account other criteria to select the most economically favorable offer.

It should be remembered that the principle of the most economically advantageous offer in no way grants the contracting authority unconditional freedom and power of choice, on the contrary, its decision is always limited to the general interest.

The implementation of this principle in Algerian regulations is clearly visible, with the bid opening committee responsible for selecting, in accordance with the specifications, the most economically advantageous offer, corresponding to:

- 1) the least distinct, among the financial offers of the selected candidates, when the subject of the contract allows it. In this case, bids are evaluated solely on the basis of price.
- 2) the lowest ranked among the technically pre-qualified bids, in the case of standard services. In this case, bids are evaluated on the basis of several criteria, including price.
- 3) which obtains the highest total score on the basis of the weighting of several criteria, including price, when the choice is essentially based on the technical aspect of the services.

### **2.1.2 The history of law of public procurement from 1962 to 2023:**

In Algeria, as in all countries around the world, public procurement plays a crucial role in economic development. It is thanks to the various codes that govern these markets that the State provides communities with the goods, services and works necessary for their well-being. Algeria's public procurement codes date back to the French colonial era.

#### **1962 to 1964: Continuation of French legislation:**

Under colonial rule, the first public procurement laws were put in place to regulate interactions between the colonial administration and private enterprise.

Following the attainment of independence in 1962, public procurement was subject to colonial regulations, in accordance with the principles of law no. 62-157 of December 31, 1962. The newly independent Algerian authorities enacted the Public Procurement Act in order to guarantee the continuity of the administration and, above all, not to restrict or hinder its actions during a period of change marked by the inexperience and youth of the institutions charged with national reconstruction.

The first Algerian text governing a category of public contracts was the Ministerial Order of November 21, 1964, approving "the General Administrative Clauses Specifications «applicable to the works contracts of the Ministry of Reconstruction, Public Works and Transport. This text, of an urgent nature, was issued in a particular economic situation characterized by the political will to organize the reconstruction of the country, would like to take into account the aspirations of a new and independent Algeria. But it continued to refer to pre-independence colonial regulations.

#### **1967: First reform of public procurement legislation: Ordinance No. 67-90:**

The basis for the creation of the Public Procurement Legislature was the promulgation of Decree No. 67-90 of June 17, 1967, on the Public Procurement Law. This regulation was put in place at the same time as the first Three-Year Plan was implemented in 1967, which aimed to gradually implement a socialist economy, ensuring, among other things, public ownership

of all means of production and distribution. Due to the sheer number of investments made, these regulations did not actually achieve the expected results, as project deadlines were exceeded, and additional expenditures were incurred as a result of delays.

**1982: Promulgation of a more flexible code: Decree No. 82-145:**

All these organizations supported the idea of new regulations better adapted to the reality of the sector and offering greater flexibility in the awarding and implementation of public contracts. Decree no. 82-145 of April 10, 1982, lays down the rules governing public enterprise contracts. In this new decree, a new concept was introduced with regard to the public purchaser, namely the public operator. In fact, this is a natural criterion for determining precisely which individuals are selected to participate in public procurement contracts.

In fact, according to article 5 of this decree, this notion encompasses public administrations, all public establishments and bodies, as well as all socialist enterprises, including mixed-economy companies whose share capital is predominantly public.

**1991: A new code for the transition to a market economy: Executive Decree No. 91-434**

A new set of regulations was introduced by Executive Decree 91-434 of November 09, 1991, governing public procurement. The provisions of decree no. 82-145, amended and supplemented, as well as certain provisions of decree no. 67-90, which were updated by the aforementioned decree, are repealed by this decree. It confirms that EPEs and EPICs are not part of its scope and includes autonomous bodies. The term "public operator" has been abolished and replaced by a new designation: "contracting services".

The public procurement rules, as amended and enriched by Decree no. 91-434, present a number of inconsistencies, ambiguities and sometimes contradictions between them. What's more, the regulations show a certain indifference to prevailing trends and are rather inadequate when compared with international standards concerning public contracts.

From January 2001 onwards, the authorities have been obliged to carry out extensive consultations with all those involved in public procurement as a result of this situation. The aim of this consultation is to reach agreement on a comprehensive reform of public procurement regulations, which takes account of the fundamental principles of public

procurement and contributes to the efficient implementation of public facilities through better use of public funds.

Given the importance of public procurement and its influence on the overall state budget and national development as a whole, public procurement regulations have been incorporated into the hierarchy of laws. Indeed, unlike the previous text, the new legislation was established by presidential decree. This reflects the political will and involvement of the highest national authorities in the reform process to establish a solid foundation.

**2002: A new code to make more efficient use of the substantial public expenditure that arose after the economic recession of the 90s: Presidential Decree N° 02-250**

The adoption of Presidential Decree no. 02-250 of July 24, 2002, which regulates public procurement, marks an alternate within the control and implementation of public procurement, in keeping with financial improvement objectives. In particular, it became marked through essential events: the primary became inner to the country, with the release of the Economic Recovery Support Program in 2001, which mobilized full-size economic assets to sell full of life financial growth.

Two external events took place: firstly, Algeria and the European Union signed an association agreement in Valencia on April 22, 2002, and secondly, negotiations to join the World Trade Organization intensified.

**2010: Presidential Decree N° 10-236**

The principles of transparency of procedures, freedom of access to public procurement, equal treatment of candidates and integrity and probity are encouraged and reinforced by Presidential Decree 10-236 of October 07, 2010, which was amended and supplemented by Presidential Decree 12-23 of January 18, 2012, governing public procurement. The aim is to implement economic policy, which implies the control and appropriate use of public expenditure.

**2015: Presidential Decree No. 15-247**

After 5 years of implementation of Presidential Decree no. 10-236 of October 07, 2010, public procurement rules had been currently very well reformed way to Presidential Decree no. 15-247 of September 16, 2015, which regulates public procurement and public carrier delegations.

This reform is primarily based totally on numerous aspects, which include the rest of positive processes whose utility posed difficulties, a explanation of the obligations and attributions of contracting departments and procurement commissions, the institutionalization of public carrier delegation contracts and the structuring of the general public procurement discipline thru the advent of a public procurement regulatory authority.

Changes in society, and in particular the political and economic developments the country has undergone since independence, are directly linked to the successive amendments, additions and repeals of Algeria's public procurement regulations. These changes testify to the importance attached by the legislator to the introduction of regulations adapted to each era, in order to guarantee greater transparency, equality between different companies and more efficient use of public assets.

### **2023: A new code law No. 23-12**

The law is part of an overall plan to reform public finances, with the aim of promoting good governance and transparency in the management of public funds and the presentation of accounts. The procedures included in this law are essentially based on three fundamental principles: freedom of access to public procurement, equal treatment of applications and transparency of procedures.

With regard to the procedural aspect of public procurement, the law stipulates that the call for tenders must respond to the request for tender procedure (general rule) or the negotiated procedure (exception) by direct negotiation or after consultation on the prices and conditions of performance of the public contract with an economic operator without a formal call for competition.

To ensure the technical, professional and financial capabilities of candidates and bidders, a national file, sector files and a file of economic operators at the level of each contracting department are maintained and regularly updated.

As part of the fight against corruption, a code of ethics and professional conduct for public officials involved in the preparation, award, control, negotiation or execution of public contracts is to be approved by executive decree on the proposal of the Minister of Finance.

## **2.2 Digitisation, Digitalisation and Digital Transformation :**

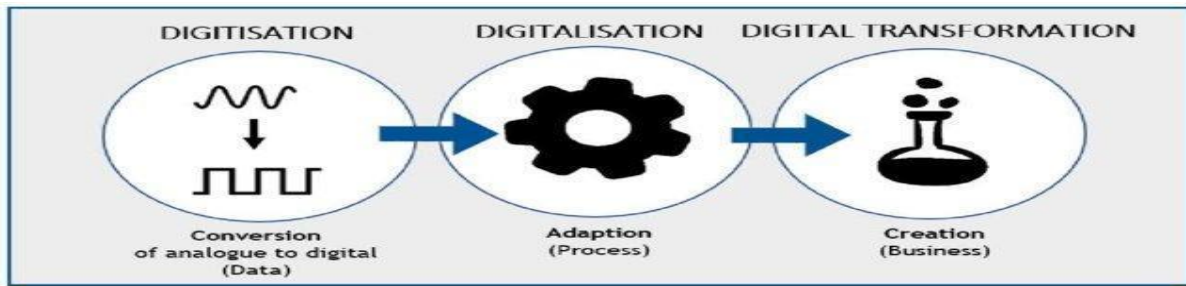
Digitalization is radically interfering and changing the fundamental assumptions of the way of life and organization of work in a postmodern society, which is becoming more globalized and more digitized than ever before.

The phrases "digitization" and "digitalization," which are more general terminology in the subject of digital transformation, come next in the literature. According to research, the three terms are frequently used interchangeably despite having different meanings (Bloomberg, 2018). Unruh & Kiron (2017) contend that there is no agreement on the meanings of these terms and that the interpretation of each term heavily depends on the individual or organization employing it, despite Bounfour (2016) having previously made this point apparent. The three concepts are attempted to be described in literature according to their scope).

The first phase of transformation is described as digitization, which Maltaverne (2017) refers to as “the conversion from analogue to digital” (e.g. digitization of data). Digitalization is the second phase and means “the process of using digital technology and the impact it has” (e.g. digitalization of a process). Unruh & Kiron (2017) have a similar understanding and describe digitalization as “the innovation of business models and processes that exploit digital opportunities”.

Finally, digital transformation is the broadest of the three terms and encompasses the whole enterprise, not just a specific process. Maltaverne (2017) describes it as the designing of “new ways of doing things that generate new sources of value”. According to Unruh & Kiron (2017) it is “[...] a systems-level transition that alters behaviors on a large scale” and it arises when new digital business models and processes restructure economies. Digital transformation is customer-driven and requires cross-cutting organizational change along with the implementation of digital technologies (Bloomberg, 2018; Peter, 2017). Reddy and Reinartz (2017) define digital transformation as “[...] the use of computer and internet technology for a more efficient and effective economic value creation process” and in a broader sense “[...] it refers to the changes that new technology has on the whole; on how we operate, interact, and configure, and how wealth is created within this system”. Hebbert (2017) also asserts the dissimilarity of different definitions and in her opinion, real digital transformation is “[...] about a company’s ability to react and successfully utilise new technologies and procedures – now and in the future”. The three terms/concepts are summarized and visualized in figure 1

Figure 1 Definition of Digitization, Digitalization and Digital Transformation (based on Maltaverne, 2017)



Source: Maltaverne Digital transformation of procurements good abuse of language

When we talk about digital transformation, we're actually talking about very different aspects of different aspects of digitization: new work tools, digitized processes and new players basing their business models on digitization. (Luc, 2019)

- ❖ New work tools simplify working methods thanks to technologies such as videoconferencing, social networks, document sharing and instant conversation, mainly for workstations.
- ❖ Process digitization makes it possible to automate information retrieval and human data entry. It also makes it easier to communicate with stakeholders and consumers by utilizing tools like platforms.
- ❖ Digital business models and new digitally enabled economic activities, including platforms. new entrants in a number of industries, including dating services, periodicals, and blockchain-based power grid management.

### 2.2.1 Challenges of digitalization:

Digital transformation represents a set of technological, organizational and cultural changes aimed at integrating digital technologies into all aspects of the organization. This transformation has major implications for companies, employees, and society in general. Here are some of the main challenges of digital transformation: (Henri SAVALL, 2016)

- ❖ **Human challenges :**

The adoption of digital tools in organizations is leading to significant changes in employees' roles and tasks, with a shift towards more strategic, higher value-added tasks. This means

developing employees' digital skills, given that over 90% of jobs require basic digital skills.

To solve this problem, companies will need to devote financial resources to skills development, review their approach to human resources management and encourage continuous learning. However, it should be noted that skills such as creativity, communication and influence are also becoming indispensable skills for employees, as they cannot be substituted by machines or become obsolete. This applies in particular to buyers, who will need to improve these skills in order to remain competitive in the future.

#### ❖ **Technical and economic challenges :**

Digital transformation requires a complete re-evaluation of the company's organization, including its procedures, methods and businesses. To achieve this goal, it is essential to start by aligning technologies with the company's overall strategy, thereby ensuring that a key business and management model is defined. Typically, a dedicated team is tasked with implementing the strategy and managing the digital transformation, with the executive committee responsible for validating important decisions.

For most organizations, this is a major change that will completely overhaul the way they operate. So it's important to have the right support as part of your digital transformation, so that you can access the right tools for your business and find the right new way of operating.

What's more, from an economic point of view, digital capital can be widely valued as intangible capital. Digital transformation is a way of optimizing costs and boosting productivity and growth. It is therefore entirely possible for a company that opts for digital transformation to enhance the value of its digital capital.

#### ❖ **Data protection challenges :**

It is vital to create a climate of trust in the digital environment, particularly with regard to the protection of personal data. Without this, certain stakeholders may be reluctant to embark on this path, stifling the economic development of companies and slowing down innovation. This issue is all the more important as the sharing of personal data increases with the massive use of the Internet, social networks and IOT. This is why personal data, dubbed "the black gold of the 21st century", must be protected.

### **2.2.2 Key factors for successful digitalization:**

Digital transformation is a strategic shift where companies integrate technology across their operations to drive significant change and unlock various benefits. One key advantage is efficiency gains achieved through automation, streamlined processes, and data-driven decisions, enhancing productivity and responsiveness to market dynamics. Additionally, digital transformation enhances the customer experience by leveraging technologies like AI and data analytics to deliver personalized, engaging interactions that foster loyalty and revenue growth.

Moreover, digital transformation opens avenues for new value creation by providing insights into market trends, consumer behavior, and emerging opportunities. This informs innovation and the development of products or services that resonate with customers, boosting competitiveness and differentiation. The approach to digital transformation varies based on industry, culture, and strategic goals, with some focusing on internal operations optimization through cloud computing and IoT, while others prioritize customer-facing initiatives via digital marketing and sales.

Successful digital transformation necessitates a mindset shift towards innovation, continuous learning, and adaptability. It also requires robust cybersecurity measures and data privacy protections to build trust with customers. Ultimately, embracing digital transformation empowers companies to thrive in today's dynamic business landscape by unlocking efficiencies, enhancing customer experiences, and driving innovation-led growth.

- **corporate management**

In this part we will talk about some of the key factors of digitalization in the structure of the company

- **Top management**

Digital transformation entails a comprehensive overhaul within a company, necessitating top management's immersion in the digital landscape. However, this poses challenges for some large firms where leadership may lack digital familiarity, impeding the transition. The initial step involves ensuring the management committee grasps the digital realm, tasked with defining the company's strategy, outlining the implementation plan, akin to conducting an orchestra of stakeholders.

Conducting an internal audit comes next, assessing the company's current state, identifying areas for improvement across departments, and determining necessary tools. Subsequently, an external audit evaluates competitors' digital operations, tools, and digital maturity, enabling the company to position itself, set objectives, identify areas for improvement, and gain a global business vision, all spearheaded by top management.

Post-audit, planning the digital transformation ensues, including developing a new strategy and integrating new business models. Embracing a "test and learn" culture is vital, testing innovations on a small scale to minimize costs and obtain feedback efficiently. This culture should persist post-transformation, fostering continuous improvement and adaptation.

Defining appropriate strategies and changes is key, necessitating stakeholder understanding and commitment, pivotal for transformation success. Clear communication, active listening to concerns, and integrating stakeholders' ideas are essential for buy-in, backed by top management's unwavering support and confidence in the project.

Deployment time should adapt to encountered problems, prioritizing resolution before proceeding. Post-deployment, continual optimization is crucial as digital transformation is an ongoing, profound change requiring cultural and organizational impact to ensure adaptability to the digital world's changes.

### ➤ **CORPORATE CULTURE AND ORGANISATION**

A digital transformation not only involves changes in the management committee but also necessitates a comprehensive shift in the company's culture and organization. Corporate culture, defining the company's appearance and ways of reacting to situations, is crucial for effective collaboration among employees based on shared values. Human Resources plays a vital role in ensuring the human factor aligns with these changes, supporting employees, enhancing recruitment, and adapting relationships and processes.

Cultivating a new culture and organizational structure that embraces changes in society is essential for digital transformation success. This includes implementing new working methods like "test and learn," fostering agility to adapt swiftly to changes, and embracing continuous delivery to automate software changes for deployability at any time. These elements are integral to a company's success in navigating the digital landscape.

The following table, drawn from the presentation given by the Angie agency, summarizes the main differences between a more traditional culture and a more recent one:

*Tableau 3 summary table of the major differences between a classic and a new corporate culture.*

Verticality	Horizontality
Risk management	Risk acceptance
Rigidity	Agility
Anticipation	Experimentation
Creation	Reuse
Planning	Serendipity

**Source :** Ducrey, 2019

Planning for the extensive changes required in a digital transformation demands a workforce equipped with digital skills. These skills, spanning analytical, technical, creative, interpersonal, and management realms, are essential not only for the IT sector but for the entire company, particularly Human Resources (HR). The planning process entails ensuring HR possesses and disseminates these skills throughout the organization. Centralized management is crucial to facilitate integration at all levels. The objectives of digitizing the organization and its culture, as outlined by Ducrey (2017), include promoting digital understanding, enhancing employees' digital skills, measuring progress, ensuring ROI, fostering effective communication, and facilitating employee exchanges.

The testing phase involves gradually modifying existing processes and policies. Clarifying roles and responsibilities within the company is pivotal, along with creating a code of conduct and assessing current procedures for relevance and alignment with company objectives. Encouraging a "test and learn" approach, HR must foster trust and transparency to embrace failures as learning opportunities.

Feedback from tests guides effective integration into prototypes, facilitated by agile management for swift adaptation. Staff training is fundamental, emphasizing ongoing learning and frequent upgrades to digital skills. Various training formats, including in-company sessions, external conferences, and distance learning, cater to individual needs.

Optimization is critical to avoid repeated transformations, with collaboration being a key driver. Collaboration's benefits in terms of mutual aid, knowledge sharing, and project management are maximized through employee involvement, exemplary management practices, and culturally aligned tools and strategies. These measures collectively optimize organizational effectiveness during digital transformation and ensure sustained success in a dynamic digital landscape.

- **Update and secure Technology**

A digital transformation implies that the company uses up-to-date, secure technology. Even if digital tools are less important than corporate strategy, they remain essential and should not be neglected.

- **Technologies**

Some large companies have a considerable backlog of IT equipment, which makes many daily tasks cumbersome: long computer start-up times, slow file transfers on the intranet, difficulties using certain software... Since technology is at the service of the company, it must also be updated in this transformation to make it agile, fast and accessible...

Today, the Internet makes it possible to store data in the cloud, and even to use software over the Internet, through cloud computing and its many solutions. It's becoming increasingly common to decentralize hardware and even software. Here are just a few of the solutions offered by cloud computing:

Figure 02: Summary of the main cloud computing systems: IaaS, PaaS, SaaS

On-Premise	IaaS	PaaS	SaaS
Application	Application	Application	Application
Data	Data	Data	Data
Runtime	Runtime	Runtime	Runtime
Middleware	Middleware	Middleware	Middleware
O/S	O/S	O/S	O/S
Virtualization	Virtualization	Virtualization	Virtualization
Servers	Servers	Servers	Servers
Storage	Storage	Storage	Storage
Networking	Networking	Networking	Networking

BLUE - consumers are managing the service  
ORANGE - cloud providers are managing the service

Transitioning from traditional software licenses to a usage-based payment model offers significant advantages for companies undergoing digital transformation. This approach aligns costs with actual usage and user numbers, resulting in reduced expenses compared to traditional fixed licenses. Additionally, it eliminates the need for investing in servers, manpower, and installation costs associated with in-house services.

The Information Systems Department (ISD) plays a critical role in overseeing technology during digital transformation. Collaboration between ISD and the company is essential, but it's crucial to ensure alignment between the company's strategy and the Chief Information Officer's (CIO) approach. Simplifying communication is key to fostering collaboration, which involves minimizing jargon, defining essential terms, and possibly hiring individuals with dual profiles to act as liaisons between technical and operational teams.

Benjamin Delespierre emphasizes the importance of synergy between digital tool developers and users for project success. Listening to everyone's input and developing solutions accepted by all parties is vital. Effective collaboration can lead to improved User Experience (UX), addressing the high rate of site abandonment due to poor UX, which impacts reputation.

IT departments are well-suited for "test and learn" practices, aiding in testing phases without abrupt transitions that could hinder efficiency. Digital transformation also involves considering cloud migration, balancing between public cloud's cost-effectiveness and private cloud's security.

Software As a Service (SAAS) solutions offer benefits like quicker installation, reduced maintenance, and cost savings, making them a sensible choice during digital transformation.

Test phases are crucial for validating hypotheses, confirming innovation value, addressing unforeseen issues, and ensuring successful integration of digital solutions within the organization.

## ➤ **DATA**

Data management has emerged as a crucial asset for companies like Google and Facebook, revolutionizing digital marketing through precise targeting and enhanced business performance. However, many companies struggle with data management complexities, especially with the stringent requirements of the General Data Protection Regulation (GDPR) necessitating a robust data management strategy.

A critical aspect of data management is taking a comprehensive view of company data to identify and prioritize important information, thereby improving its utility and organization. This entails sorting through databases (DBs) and determining the optimal storage system, whether cloud-based, in-house, or a hybrid approach based on data importance and confidentiality.

Given the multifaceted nature of data management, appointing a Chief Data Officer (CDO) has become essential. The CDO's role encompasses creating an environment for easy and secure access to information, implementing Business Intelligence platforms and software systems for autonomous data analysis, and ensuring data-driven decision-making across the organization.

Implementing dashboards is vital for real-time monitoring of key information, facilitating efficient decision-making. Data management extends to various departments like Supply Chain Management (SCM), software packages, and customer relationship management (CRM), particularly through tools like the Unique Customer Repository (UCR) and Data Management Platform (DMP) for targeted advertising campaigns and improved customer relations.

Looking ahead, the proliferation of data underscores the importance of leveraging artificial intelligence (AI) and machine learning (ML) for real-time data processing, predictive analysis, and personalized customer experiences. Digital technology has profoundly transformed

marketing, emphasizing customer-centric approaches and data mastery to drive successful digital transformations across companies.

- **Company performance**

One of the main forces behind increased company success is digital transformation. Employing digital technology may help businesses become more efficient and simplify their processes. This may entail putting in place cloud-based solutions for more flexibility, automating jobs, and using data analytics to optimize procedures.

Measuring performance is all about data: you need data to measure performance. But be careful to make relevant measurements so as not to drown in a mass of useless data, and to represent them correctly. To make good measurements, you need to define what to measure, how often to measure it, and above all, how to apply the appropriate changes following measurement. Making measurements without using them afterwards will be a waste of time (Ducrey, 2017).

Today, Key Performance Indicators (KPIs) have become masters of measurement. The company must define these KPIs in line with its objectives: each company department will have different objectives, and therefore different KPIs. The following table will help you define the KPIs relevant to your department (Jourdan, 2019).

*Tableau 4 Different KPIs relevant to the department by Jourdan*

1. Define the need for KPIs	2. KPIs must correspond to the company's objectives	3. KPIs must indicate actions to be taken	4. Share KPIs with employees
Has the conversion rate increased since last month?  Is it better than this time last year?	This will help you identify the success factors for your objectives	If your conversion rate has dropped by 10%, the KPIs should enable you to choose which actions to continue or stop.	The very essence of digital transformation is communication with the rest of the company: KPIs are part of this collaboration.

The testing phases are rapid and constant for these measurements: the company will have to find the most suitable measurement tool from among the multitude on offer, while constantly renewing itself.

Deployment will then take the form of interactive dashboards: these should be available to all employees, so that they can consult their own performance, as well as that of their unit and the company as a whole. Moving forward by keeping track of the objective will improve productivity.

The optimization of these dashboards lies in comparison with competitors. These KPIs will enable the company to position itself in relation to other companies on particular points, in order to see where efforts need to be made.

It is also important to redefine KPIs and therefore dashboards frequently, to ensure that they are in line with the company's strategy and objectives. The principle of agile organization also applies to these KPIs.

### **2.3 The digital transformation of public procurement:**

The digitization of public procurement is the process of transforming traditional purchasing procedures into electronic processes, enabling companies and public administrations to manage the entire life cycle of a public contract online, from the publication of the call for tenders to the conclusion of the contract.

#### **2.3.1 Digital transformation of the public procurement process:**

The e-procurement process generally comprises the following stages:

1- Electronic call for tenders: Publication of the call for tenders online on a dedicated platform. The companies concerned can consult information on and download the necessary documents.

2- Electronic bidding: Online bidding is the process by which a bidding company submits its bid in response to a call for tenders using a dedicated using a dedicated electronic platform. This involves completing and upload all the documents required to submit a complete bid, including company information, application documents, financial and technical offers.

and technical bids.

Online bidding is an efficient and convenient process for companies wishing to respond to calls for tenders within the framework of dematerialized contracts. It saves time and costs by eliminating the need to print, copy and deliver physical documents.

3- Evaluating bids electronically: The evaluation of electronic bids is the process by which public purchasers examine bids submitted online by tendering companies and select the bid that best meets the needs of the public administration. This evaluation is carried out electronically via a dedicated platform.

The evaluation process for electronic bids may vary depending on the tender and procurement procedure.

4. Electronic award notice: The public purchaser's final decision to issue a call for bids is communicated to bidding businesses and the public through an electronic document published on a specialized website. The business chosen for the public contract is named in the award announcement, along with details about the selection process.

Usually, the award notification is released just prior to the contract being signed, following the conclusion of the selection process. Most nations have made it necessary to ensure the fairness and openness of public procurement processes.

5- Electronic signature of the contract: Both the contracting authority and the winning company must sign the contract electronically to make it official. Contract documents are generally available online on the dedicated electronic platform.

6. Notification of failed bidders: Electronic notice of the public purchaser's decision must be sent to unsuccessful bidders. The reasons their offer was not chosen might be included in this communication.

7. Publication of the advertising notice: To notify the public that the public contract has come to an end, the contracting authority is required to publish an electronic advertising notice. This notification could include details on the contract's worth and the winning business.

8- Contract monitoring: Following the public contract's completion, both the winning business and the contracting authority are required to abide by its conditions. Monitoring a contract may involve keeping an eye on payments, delivery, and correspondence between the parties.

The process of digitizing public procurement may vary from country to country, depending on the procurement procedures used. However, the use of electronic platforms dedicated to the publication of invitations to tender, the submission of bids, the evaluation of bids and the notification of results has become standard practice for most dematerialized public procurement.

### **2.3.2 The benefits of digitization for those involved in the public procurement process:**

The digitization of public procurement has a significant impact. It modifies the organization and operation of public administration and business (professions, skills, values, etc.).

The benefits for those involved in the process in the public sector are as follows and for those involved in the process at the bidding company.

- **Gains for public administration players:**

- **The person responsible for the contract:**

- A more transparent process: flows are easily and automatically identified. The progress of document exchange can be tracked easily, and details of past operations can be easily retrieved.

- Dematerialization enables equal access, which may have been difficult when paper documents were exchanged or made available to geographically distant or financially limited parties.

- Greater efficiency.

- The risk of claims is reduced by the remanence of exchanges and there in the databases: a copy is made available to each agent immediately after opening.

- Easier circulation between departments, with no risk of document loss.

- Reduced processing times and greater speed:

- In document processing: fewer data entries, shorter processing times;
- in document tracking: no time lost in filing and searching;
- in data transfer and document tracking.

➤ **Finance manager:**

- A more economical process:

- Saves paper and correspondence costs;
- Saves space (storage, archiving);
- Staff savings (handling, filing, data entry).

- Possibility of having a higher degree of competition in the purchasing process, and therefore more attractive pricing.

➤ **The personnel manager:**

- Redirect staff to higher value-added tasks.

- Staff savings (handling, filing, data entry).

- **Gains for the bidding company:**

➤ **Sales function:**

- Possibility of correcting answers at the last minute;

- Reduced cost and response time;

- Easier analysis of proposals.

➤ **Organizational and quality aspects:**

- Saves time in compiling response files;

- Faster document processing: less data entry, less time precious time saved by eliminating overland routing delays;

- Reduced transmission times, since filing a response takes just a few minutes;

- A level of security guaranteed by the use of an electronic signature certificate known to public purchasers;

- Immediate assurance that the response submitted by the company has been received by its electronic acknowledgement of receipt;

- Easy archiving and tracking: no time wasted on filing and searching, just a simple click a simple click;

- Easily track the progress of document exchange, and easily find details of past flows;

- Reduce data-entry errors.

➤ **Human resources:**

- Time saved on logistical and secretarial tasks;
- Focusing staff on higher value-added tasks.

➤ **Financial aspect:**

- Reduced operating costs by eliminating postage and courier expenses coordination between departments;
- Savings in paper and correspondence costs;
- Space savings (archiving);
- Staff savings (handling, filing, data entry).

### **2.3.3 The current situation in Algeria regarding the digitalization of public procurement:**

In Algeria, the digital transformation of public procurement is an ongoing process that has been underway for several years. The aim is to modernize public procurement procedures and make them more transparent, efficient and accessible to businesses.

The Ministry of Post, Telecommunications, Technologies and Digital Affairs is in charge of e-government policy in Algeria. Its main mission is to create and implement various strategies and projects to modernize public administration (OECD, Review of Algeria's public procurement system, 2019).

The Algerian government has launched a dematerialization process aimed at replacing paper documents with computerized media, which materialize through an electronic portal. This tool was created by Article 213 of Presidential Decree 15-247 of September 16, 2015, and is managed jointly by the Ministry of Finance and the Ministry of Information and Communication Technologies, according to the remit set out in a joint order.

The content and management of the portal are defined by an order issued by the Minister of Finance. The electronic portal was originally established by Article 137 of Presidential Decree No. 10-236 of October 7, 2010, on the regulation of public procurement, and the Order of the Minister of Finance of November 17, 2013, sets out its content and management procedures.

The purpose of the portal is to enable the dissemination and exchange of documents and information relating to public contracts, as well as the electronic transmission of these contracts (Youcef, 2020).

The electronic public procurement portal was officially launched on December 23, 2021 by the Prime Minister and Minister of Finance, Aïmene Benabderrahmane. The portal is used to instantly distribute and exchange documents and information relating to public procurement electronically. Since its launch, the portal has achieved significant table:

*Tableau 5 Electronic portal statistic*

Number of users	Number of registered public companies	Number of registered economic operators	Number of procurement
17045	3261	348	611

**CHAPTER II:  
METHODOLOGICAL  
FRAMEWORK AND HOST  
ORGANIZATION**

The next chapter describes the Finance Ministry organizational context using data from various documents and information gleaned from the ministry itself. It also includes a methodological framework that includes quantitative studies as well as the various techniques we used to collect and process the data with a view to solving our research problem.

## **Section 1 Organizational context**

This section is devoted to the presentation of the host entity, in order to provide an overview of the organization of the Ministry of Finance. We will describe the structure that enables us to carry out our research work, which is the General Directorate of Budget.

### **1.1 Ministry of Finance**

The Ministry of Finance is a sovereign ministry with a highly influential role in national economic policy. It is made up of a number of general directorates, each responsible for different areas such as customs, the national domain, the budget, the treasury, taxes and so on. This organization is described in Executive Decree no. 21-252 of 06 June 2021, which defines the organization of the central administration of the Ministry of Finance.

Since the country's independence, the Ministry of Finance has undergone profound changes:

- ❖ April 1962, when the Evian agreements were signed, a provisional government was established. This government replaced the existing general government. Within its executives, an all-Algerian financial affairs department was set up. Algerian. The new headquarters of the Ministry of Finance.
- ❖ September 1962, the first Minister of Finance was appointed by decree, hence the name .
- ❖ April 1963, the Ministry of Finance was endowed with its first organization comprising directorates, sub-directorates and departments.
- ❖ September 1963, creation of a Ministry of Finance and Economy, combining the responsibilities of the Ministers of Industry and Energy, the General Directorate for Planning and Economic Studies and Economic Studies, the Professional Training and Executive Training Commission in addition to those of the Ministry of Finance.
- ❖ In July 1970, by ordinance establishing the new government, the Ministry of Finance and Planning was split up. Ministry of Finance and Planning was split into two ministerial departments:  
  
Ministry of Finance and the Secretariat of State or Planning, which later became the Ministry of Planning and Regional Development in 1980.
- ❖ June 1990, creation of the Ministry of the Economy, bringing together finance, trade and small and medium-sized enterprises (SMEs).

- ❖ June 1997, this change involved bringing together the Ministry of Finance and the Ministry of Planning and Regional Development.

## **1.2 Organization of the Ministry of Finance:**

According to Article 1 of Executive Decree no. 21-252 of June 06, 2021 on the organization of the central administration of the Ministry of Finance, under the authority of the Minister of Finance, the central administration of the Ministry of Finance comprises:

1- **The Secretary General**, to whom are attached the Mail Office and the Ministerial Office of Internal Security, assisted by six (6) Directors of Studies and four (4) Heads of Studies.

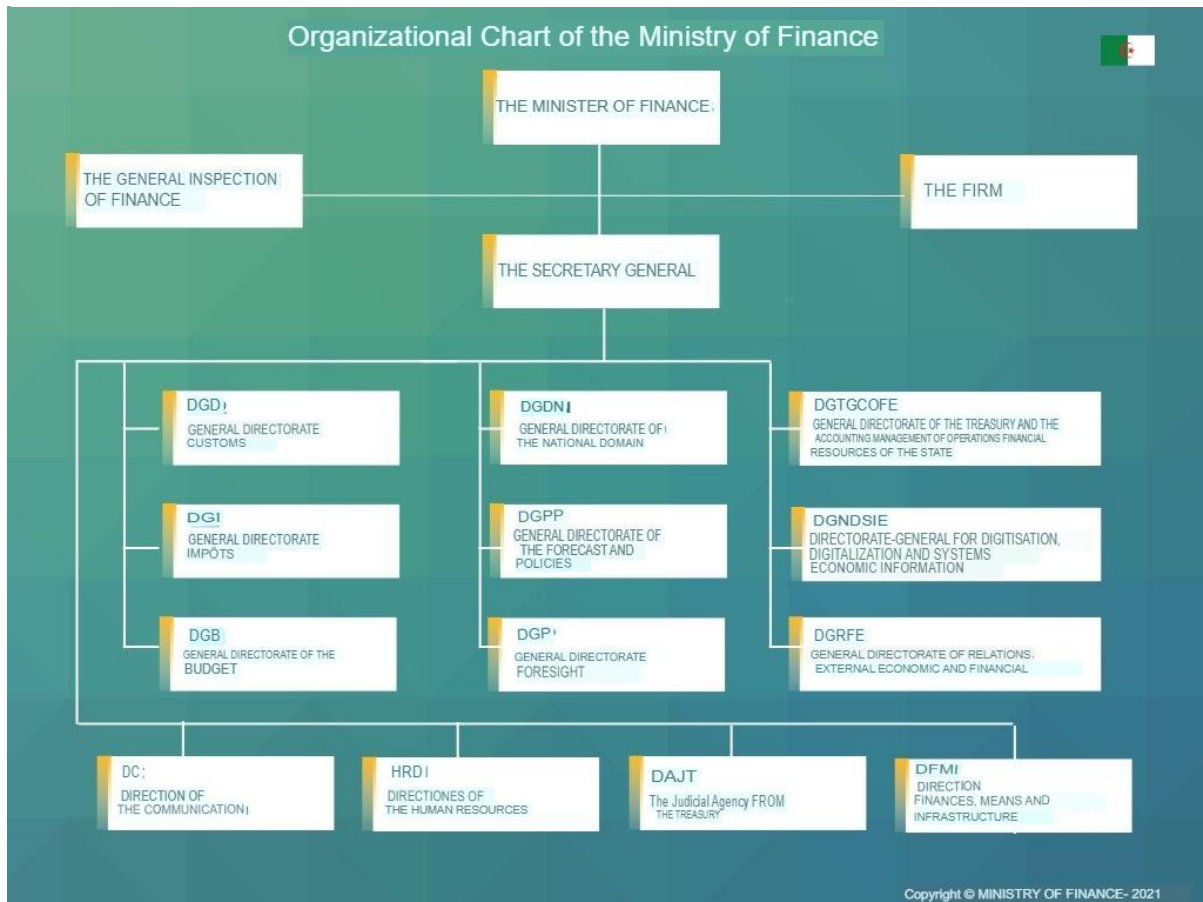
2- **Chief of Staff**: assisted by six (6) study and summary officers, responsible respectively for:

- Preparing the Minister's speeches to Parliament;
- Legal affairs;
- Relations with executive bodies ;
- Relations with associations ;
- Preparation, evaluation and follow-up of the Ministry's activity programs;
- files submitted to the Council of Ministers and Government meetings.

3-**The following structures :**

- The General Directorate of Forecasting and Policies;
- General Budget Directorate;
- The Treasury and State Financial Operations Accounting operations;
- Directorate General of Taxes;
- The General Directorate for Digitization, Digitalization and Economic Information Systems;
- General Directorate for External Economic and Financial Relations;
- General Directorate of National Domain;
- General Directorate of Foresight;
- Directorate General of Customs, (governed by a specific text);
- Inspectorate General of Finance (governed by a specific text);
- Directorate of Finance, Resources and Infrastructure;
- Human Resources Directorate;
- Treasury Judicial Agency Directorate;
- Communications Directorate;

Figure 2 Organization diagram of the Ministry of Finance



Source: Ministry of finance website

### 1.3 Directorate General of the Budget:

Executive Decree no. 21-252 of June 06, 2021, on the organization of the central administration of the Ministry of Finance, provides for the organization of the General Budget Directorate, created in 1995 by Executive Decree no. 95-55 of February 15, 1995. This department is responsible for managing the operating budget, the capital budget, and personnel and general resources through its divisions and directorates. It is responsible for :

- Participating, in conjunction with the structures and institutions concerned, in budgetary policy, and the preparation and implementation of international conventions and agreements with a financial impact on the State budget State budget;
- Preparing the orientation memorandum for the finance bill and the State budget, in consultation with the structures concerned, and implementing measures and actions relating in particular to the preparation of the State budget, its execution, control and evaluation;
- Examine requests for budget appropriations and reassessments in compliance with the rules, standards, conditions and procedures laid down by the laws and regulations in

force, based, whenever necessary, on documentary and on-site assessment of the financial and physical progress of projects;

- Opening, transforming, cancelling and redeploying budget posts for public institutions and administrations;
- lead budgetary reform and, in consultation with the departments concerned, initiate reform of the budgetary legal framework and ensure its application;
- Participate, in conjunction with the structures concerned, in the preparation and implementation of the medium-term budgetary framework and the medium-term expenditure framework;
- Initiate any legislative or regulatory texts relating to budgetary matters, public orders and other matters within its area of competence;
- Budgetary control of public expenditure and the examination and processing of requests for legal opinions falling within its remit;
- Decide on all measures having a financial impact on the components of remuneration, classifications, compensation schemes and pensions for the staff of government departments, public establishments and assimilated public organisations.

It is made up of five (5) divisions, three (3) of which have common missions:

### **1.3.1 Human development program-budget division:**

Composed of four (4) departments:

1) The Directorate of Education and Youth and Sports Program Budgets:

Is composed of :

- Sub-Directorate for Education Program Budgets;
- Sub-Directorate for Youth and Sports Program Budgets.

2) Directorate of program budgets for higher and professional education:

Consists of :

- The Sub-Directorate of Program Budgets for Higher Education and Scientific Research;
- Sub-Directorate of Program Budgets for Teaching and Education and Training.

3) Directorate of health and social protection program budgets:

Consists of :

- Sub-Directorate for Health Program Budgets;
- Sub-Directorate for Labor, Employment and Social Security Program Budgets.

4) Socio-cultural program-budgets department:

Consists of :

- The Sub-Directorate for Budgets-Programs for the Moudjahidine and Solidarity;
- Sub-Directorate for Culture and Religious Affairs Program Budgets.

### **1.3.2 Socio-economic development program-budgets division:**

Composed of four (4) departments:

1) The housing and environment program-budgets department:

Consists of :

- Sub-Directorate of Housing Program Budgets;
- Sub-Directorate for Environmental Program Budgets.

2) Economic Development Program Budgets Department:

Consists of :

- Sub-Directorate for Industry and Tourism Program Budgets;
- Sub-Directorate for Energy, Energy Transition, Renewable Energies and Extractive Activities.

3) Directorate of Program Budgets for Water Resources and Agriculture and Fisheries:

Consists of :

- Sub-Directorate of Program Budgets for Water Resources;
- Agriculture and Fisheries Program Budgets Sub-Directorate.

4) Directorate of transport and public works program budgets:

Consists of :

- Sub-Directorate for Transport Program Budgets;
- Sub-Directorate for Public Works Program Budgets.

### **1.3.3 The division of program budgets of national institutions and sectors of sovereignty and regulation:**

Composed of two (2) departments:

#### 1) Sovereignty Sector Program-Budget Division:

Composed of :

- Sub-Directorate of Program Budgets for the Defense and Interior Sectors;
- Sub-Directorate of Program Budgets for the Justice and Finance Sectors and Finance sectors;

#### 2) The Department of Program Budgets for National Institutions and Regulatory Administrations:

Consists of :

- Sub-Directorate of Program Budgets for National Institutions;
- Sub-Directorate of Program Budgets for Communication, Post and Telecommunications;
- The Sub-Directorate for program budgets of other regulatory regulatory authorities.

### **1.3.4 Budget Modernization and Synthesis Division:**

Composed of (4) directorates:

#### 1) The Budget Synthesis Directorate:

Composed of three (3) sub-directorates:

- Sub-Directorate for the consolidation of budget volumes and documents;
- Sub-Directorate for the implementation of budget appropriations and monitoring of budget execution;
- Sub-Directorate for budget coding procedures.

#### 2) Budget statistics, indicators and evaluation department:

It comprises three (3) sub-directorates:

- The Budget Statistics and Indicators Sub-Directorate;
- The Sub-Directorate for Statistical Mapping and Publications;

- The Budget Retrospective and Prospective Evaluation Sub-Directorate.

### 3) Budget Systems Modernization Department:

It is made up of three (3) sub-directorates:

- Sub-Directorate for the implementation of new procedures;
- Sub-Directorate for the coordination and support of budgetary reforms;
- Sub-Directorate for budget reform design.

### 4) Information Systems Department:

It comprises three (3) sub-directions:

- The Integrated Budgetary Systems Sub-Directorate;
- Network Sub-Directorate;
- The Maintenance Sub-Directorate.

## **1.3.5 The Budgetary Regulations, Control and Public Procurement Division:**

Responsible for

- ❖ Initiating, proposing and participating in the formalization of all legislative and regulatory provisions applicable to budgetary control, public procurement and the management of the budgets of the State, local authorities, public administrative establishments and assimilated public bodies;
- ❖ oversee and implement modern budget management methods in their legal aspects, and support, in conjunction with the authorities concerned, legal reforms to the budgetary systems of the State, local authorities and public establishments;
- ❖ Inform, disseminate and publicise all documents and information relating to public procurement and other public contracts;
- ❖ To issue opinions on the rules and procedures laid down by legislation and regulations on budgetary matters, public procurement and other public contracts;
- ❖ Supervises and coordinates the network of budget control departments and is responsible for overseeing and coordinating their activities;
- ❖ Examines and studies draft legislation and regulations submitted to the General Directorate for approval, and coordinates all studies relating to such legislation and regulations;

- ❖ Implementing the Government's salary policy, in liaison with the authorities concerned, and deciding on any measure with a financial impact on the components of remuneration, classifications, compensation schemes, etc. of remuneration, classifications, benefits and pensions for the personnel of government agencies, public establishments and assimilated public bodies;

- ❖ Establish the decisions of authorizing officers.

It comprises four (4) departments:

1) The Budgetary Regulations and Legal Studies Department:

It comprises three (3) sub-directorates:

- Sub-Directorate for State budget regulations and public establishments within the budgetary perimeter;
- Sub-Directorate for local authority and public establishment budget regulations;
- Sub-Directorate for Legal Studies.

2) Public Procurement and Other Public Contracts Department:

Is responsible for:

- Participating in the programming and orientation of public procurement, in accordance with the policy defined by the Government;
- initiating and participating in the drafting of legislation and regulations governing of public contracts, public service delegations, public-private partnerships and other and other public contracts, and to examine requests for legal opinions;
- Ensure the establishment and implementation of legislative and regulatory provisions for the best use of public funds;
- Implement instruments for the analysis and control of public expenditure in relation to public contracts, public service delegations, public-private partnerships and other public contracts;
- Modernize procedures for awarding, executing and managing public contracts, public service delegations, public-private partnerships and other public contracts, and ensure that specifications are standardized.

It is made up of four (4) sub-Directorate:

### The Public Procurement Regulations Sub-Directorate:

#### Responsible for :

- Proposing all legislative and regulatory provisions applicable to contracts entered into by institutions, public administrations, assimilated public bodies and economic public enterprises;
- oversee the implementation of legislative and regulatory provisions in force in force with regard to public procurement;
- Undertake studies and summaries relating to public procurement and its operation.

### Sub-Directorate for the regulation of other public contracts:

#### Responsible for :

- Propose all applicable legislation and regulations concerning public service delegations, public-private partnerships and other public contracts;
- overseeing the implementation of legislative and regulatory provisions in force public service delegations, public-private partnerships and other public and other public contracts
- Undertake and use studies and summaries relating to public service delegations, public-private partnerships and other public contracts.

### Sub-Directorate for standardisation of specifications and dematerialization of the public procurement system:

#### Responsible for :

- Propose all legislative and regulatory provisions concerning the standardization of specifications and the dematerialization of the public procurement system;
- Participate, in conjunction with the relevant departments and bodies, in the examination and implementation of model specifications and model contracts for works, supplies, studies and services;
- Promote transparency throughout the public procurement cycle through dematerialization;
- oversee the implementation and monitoring, in conjunction with the relevant departments, of the electronic public procurement portal;
- Participate in the dissemination and dynamic publication of information relating to public procurement, as well as monitoring legal and information concerning public procurement.

The Public Procurement Monitoring and Evaluation Sub-Directorate:

Responsible for :

- To initiate any measure enabling the monitoring of public orders;
- Undertake any study aimed at evaluating public orders;
- to consolidate and carry out work to summarize and analyze the situation and the execution of public orders.

3) The Remuneration Systems and Status Department:

- It is made up of three (3) sub-departments:
- The Compensation Systems and Allocations Sub-Directorate;
- The Sub-Directorate for Status and Classification;
- The Budgetary Staffing Sub-Directorate.

4) The Budgetary Control Department:

It comprises two (2) sub-directorates:

- Sub-Directorate for Budgetary Control Department Management;
- Sub-Directorate for Litigation and Evaluation of Budgetary Control control activities.

- **Section 2 Methodological framework**

In this section, we present the methodology we used to conduct our research, as well as the various techniques we used to collect and process the data with a view to solving our research problem.

## **2.1 Research methodology**

There are two approaches to conducting field research for dissertations: qualitative and quantitative. These two methods are often used in scientific research, but they also apply to management research. Whichever research method is chosen, it is not easy to collect and analyze them.

Qualitative research is carried out using interviews or opinion polls with a representative sample. These interviews enable researchers not only to gather information for the survey, but also to explore the research themes more widely. And then we can use what we have to analyze, study and draw conclusions. This survey method provided more verbal data than numerical data, which is less measurable. Such a method is more subjective, but the advantage is that it allows a more in-depth study to be carried out with a small sample.

However, quantitative research refers to the analysis of a sample through quantitative surveys with a large number of people. It is generally represented by a large quantity of data. This research methodology allows the researcher to make valid interpretations through the comparison and analysis of these closed questions in a more objective manner. The limitation of this research method, however, is that the questions are closed and the answers are expected at the time of completion. There is little opportunity for a deeper or wider exchange for each person answering the questions.

## **2.2 Qualitative research**

To ensure the proper structuring and organization of our study, and to guarantee a smooth progression through the various stages leading to conclusive results, we decided to adopt a qualitative approach.

Selon Flick (2018), la recherche qualitative implique de placer l'observateur dans le monde et de s'engager dans une variété de techniques d'interprétation qui rendent le monde visible. Le monde est transformé en une collection de représentations grâce à ces techniques, y compris les notes de terrain, les entretiens, les photographies, les enregistrements et les notes à soi-même. Cette méthodologie de recherche est naturaliste et interprétative parce qu'elle observe les choses dans leur environnement naturel et tente de les comprendre en fonction des significations que les gens leur donnent.

La compréhension d'un phénomène sociétal ou humain exige d'offrir une perspective complète et approfondie à l'aide de diverses méthodologies et de donner un aperçu approfondi de la situation dans son contexte naturel. Telle est l'essence d'une stratégie de recherche qualitative. Cette approche aide les universitaires à développer une compréhension plus profonde d'un sujet

particulier qui vient d'émerger comme sujet de recherche et qui n'est pas encore totalement compris. Elle met également l'accent sur la compréhension de la question étudiée d'un point de vue humaniste ou philosophique. (Islam, Baikady, & Ahmed Khan, 2022).

### **2.3 Data collection techniques**

Qualitative research includes a variety of data collection methods and techniques. In our study, we selected four data collection techniques based on research criteria.

#### **➤ Observation**

In our daily lives, we make numerous observations of the world around us, and these observations of objects, events, and phenomena greatly influence our attitudes, behaviors, and beliefs. In order to improve our findings and methodologies as well as gain insight into how various operations are carried out, we have decided to use observation as a data collection strategy in our research. (Islam, Baikady, & Ahmed Khan, 2022).

Similarly, "observation" is described in the Oxford Dictionary as "the process of closely watching or monitoring something or someone." Therefore, we were able to gain firsthand experience and notice the ways and methods used to perform the necessary tasks related to the job by using direct structured undisguised observations in the work environment as a qualitative data collection tool. Additionally, by observing various employees and how they carry out their jobs during the internship, we were able to notice and gather many things that assisted us with the research.

#### **➤ Document analysis**

Document analysis is a methodical approach used to examine and assess many types of printed and electronic documents, including computer-based and internet-transmitted content. Document analysis is a qualitative research technique that entails analysing and interpreting data to derive meaning, comprehend concepts, and build empirical knowledge. A variety of resources, including attendance records, event programs, manuals, books, brochures, diaries, newspapers, press releases, survey data, public records, and even scrapbooks and photo albums, can be used to undertake a detailed analysis. (Bowen, 2009)

#### **➤ Interviews.**

Using interviews, a researcher might study participants' attitudes, beliefs, experiences, views, and behaviors in relation to a certain issue during a research interview. The purpose of a research interview is to gather in-depth, nuanced information on the participants' perspectives, experiences, and understanding of the topic under study. Structured, semi-structured, and unstructured research interviews are only a few of the several formats available. (Liamputtong, 2019)

By posing questions to participants, interviews may be used to collect verbal data for qualitative research studies. Thus, interviews provide the investigator a chance to compile important data.

1. The directive interview: This method involves asking questions using a closed-ended (yes/no) or semi-closed-ended (option between propositions) response format. This method works especially well for presenting typologies and measuring hypotheses.
2. Semi-directive interview: this type of interview is organized and involves the interviewer asking participants a series of previously prepared inquiries. For analysis, the responses are recorded.
3. Non-directive interviewing: this style of questioning gives participants the freedom to speak freely on a topic without being constrained by pre-planned questions. Open-ended questions can be used by the interviewer to nudge participants toward providing more details.

## **2.4 Epistemological positioning:**

Determining the research paradigms that guide the selection of theoretical and methodological techniques requires careful consideration of epistemological stance. Constructivism and positivism are two examples of the paradigms that scientific inquiry must be grounded in. We have taken a constructivist epistemological stance in our study, which holds that reality is created by social and human interactions rather than existing objectively. This epistemological stance allows us to formulate critical assessments that aim to take into consideration the social and subjective dimensions of the phenomena under research, as well as to select theoretical and methodological techniques that are consistent with our knowledge of the reality under study.

Our study aims to gather information and offer workable solutions to guarantee the project's effective execution in order to pinpoint specific steps that can be taken to enhance the digitisation of public procurement. Our dedication lies in using systematic techniques to gather the essential information for evaluating present performance and pinpointing areas that require attention. Then, based on in-depth analysis, we propose practical solutions to improve the process of digitizing public procurement, ensuring the successful implementation of this ambitious project.

## **2.5 Data collections tools**

### **The interview guide:**

The interview guide is a tool that maintains the uniformity of the interviews by acting as a checklist or memory assist. The goal of the guide is to provide consistency throughout the interviews so that they can be efficiently compared. Its main objective is to make sure that all interviews cover the same crucial subjects and that the data gathered can be thoroughly evaluated and compared.

For our study, we decided to produce 2 interview guides:

- ❖ The first interview guide is intended for the staff of the sub-directorate for the standardization of specifications and the dematerialisation of the public procurement system, who are responsible for promoting digitalisation throughout the public procurement cycle.
- ❖ The second interview guide is aimed at the main players in public procurement i.e. the contracting department and the economic operators.

Identifying suitable individuals to address research inquiries at the project's outset can present obstacles. Researchers typically aim to engage knowledgeable individuals capable of offering valuable insights and diverse viewpoints. The term "sampling" is often used to describe the process of randomly selecting pertinent examples from a known set of cases. However, in qualitative research, particularly involving interviews, the sampling approach is frequently iterative.

Researchers' perceptions of who possesses relevant knowledge and unique perspectives may evolve as they gain deeper insights into the field. Unlike the formal random sampling approach used in quantitative research, qualitative sampling involves meticulously selecting instances, items, or occurrences to construct an empirical sample pertinent to the research focus. Qualitative sampling is oriented towards achieving specific objectives rather than attempting to represent an entire population.

In our study, we chose to interview 4 individuals based on their roles as Deputy Directors, economic operators specializing in construction, and individuals responsible within the Algerian banking sector. Below is a table detailing the interviewees and their respective occupations:

*Tableau 6 The Profiles of The Interviewees*

Position	Establishment
Deputy Director responsible for standardizing specifications and digitizing award procedures	Finance Ministry
K.A	Construction private company founder
Bensaid Merrouche	ETP Bâtir MERROUCHE BENSAID
S.M	Responsible in Algeria Bank

Source established by the researcher

## **2.6 Data Analysis**

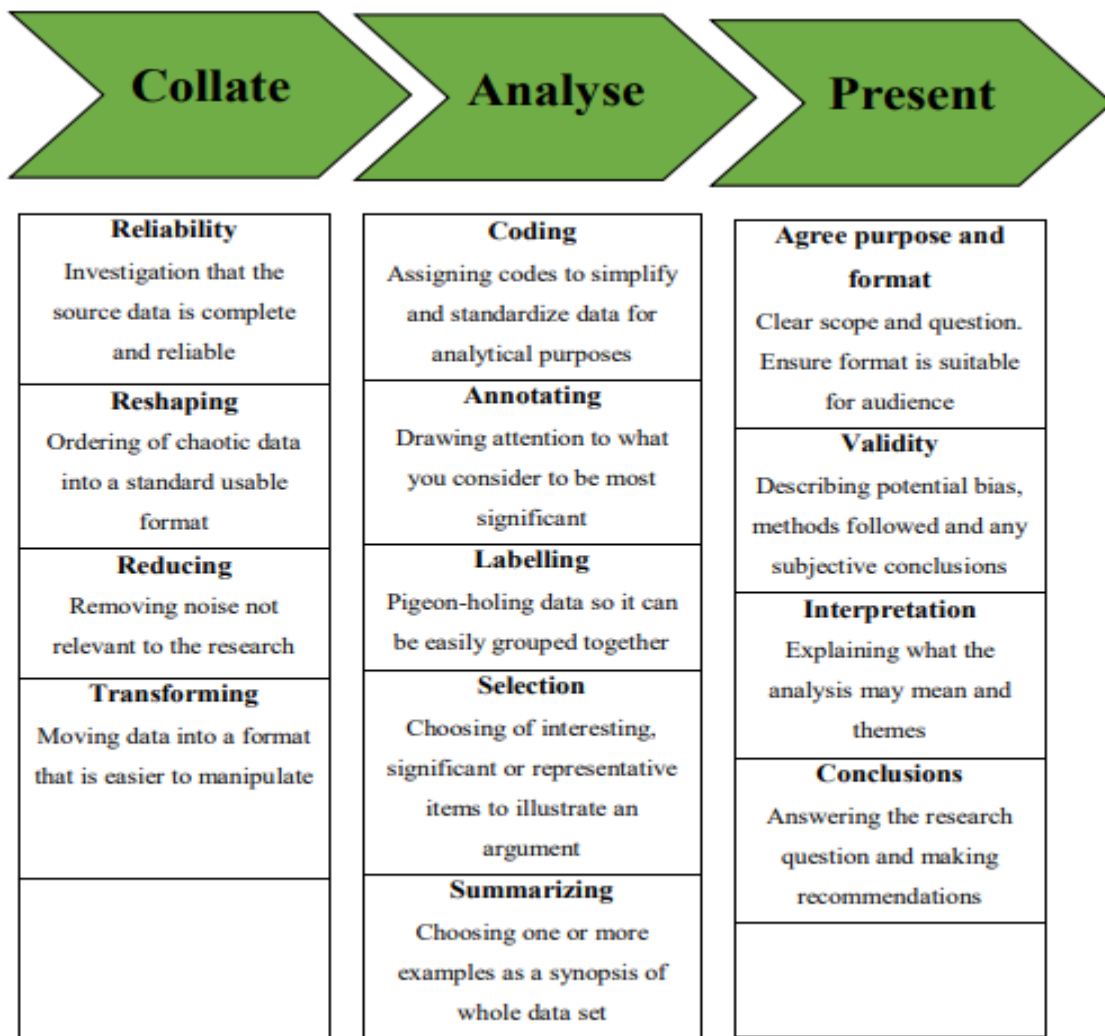
Qualitative data analysis involves systematically evaluating and interpreting non-numerical data like text, images, and videos to uncover patterns, themes, and insights. This method is commonly utilized in social sciences, psychology, and market research to gain a comprehensive understanding of people's experiences, attitudes, and behaviours. Techniques such as content analysis, grounded theory, narrative analysis, discourse analysis, ethnography, thematic analysis, and interpretative phenomenological analysis (IPA) are examples of qualitative data analysis methods.

The process of qualitative data analysis typically follows a cyclical pattern of data collection, processing, and interpretation. Methods like coding, memoing, and diagramming are employed during this process. Overall, qualitative data analysis is a powerful tool for understanding human experiences, viewpoints, and complex phenomena.

Thematic analysis, chosen for our study due to its depth, adaptability, and ability to explore multiple perspectives, involves identifying and analyzing recurring patterns or themes within the data. This method aims to fully comprehend the data, uncover implicit assumptions, meanings, and interpretations. Researchers begin by familiarizing themselves with the data, creating initial codes to highlight interesting aspects, and organizing these codes into preliminary themes. The evaluation process includes two tiers: Level one dealing with codes and data extracts, and Level two handling the complete dataset. Final themes are identified, refined, and presented to create a cohesive narrative.

Furthermore, computer-assisted qualitative data analysis software like NVivo is instrumental in managing and analyzing substantial volumes of qualitative data. NVivo supports methodologies such as grounded theory, thematic analysis, and discourse analysis, making it valuable in various research domains like psychology, sociology, anthropology, and education. It offers tools for data coding, categorization, analysis, visualization, and reporting, contributing significantly to qualitative data analysis in academic research and other disciplines.

Figure 3 Qualitative data analysis



Source: (Cox, 2014)

Data Collation involves gathering information from diverse sources like interview notes, researcher reflections, secondary data, literature, participant-provided documents, and visual elements such as photos or diagrams. This process encompasses verifying data accuracy, filtering out personal or irrelevant details, excluding non-relevant conversational content, restructuring data for easier management, providing context to emphasize key aspects, and ensuring clear comprehension of comments.

Data Analysis is pivotal for structuring, organizing, and scrutinizing data during the analytical phase. Transcripts are integral in this process. It encompasses categorizing, coding, tallying, and mapping data into distinct sections with assigned references. Coding aids in identifying crucial data, drawing conclusions, and grasping significance. Tallying unveils trends and connections within the data, contributing to more dependable outcomes. Mapping assists in presenting data sets, relationships, and analyses, augmenting understanding of the problem and its outcomes.

Data Presentation involves organizing and summarizing data for readers and researchers to derive conclusions and take action. Matrices, graphs, charts, and networks are employed to illustrate data relationships. This stage addresses research inquiries, shares noteworthy discoveries from data interpretation, validates research outcomes, selects suitable data presentation formats, and scrutinizes data representations before delivery.(Cox, 2014)

We chose a statistical approach utilizing the NVivo data analysis software for its adeptness in handling qualitative data and advanced analysis capabilities. NVivo streamlines data organization, manages large data volumes efficiently, promotes collaboration, tailors to diverse research methods, and facilitates comprehensive insights extraction. It serves as a valuable resource for researchers aiming to effectively organize, analyze, and glean insights from their data.

# **CHAPTER III: RESULTS AND DISCUSSION**

## Section 1. Results

Dans cette section, nous présentons les résultats qualitatifs. Nous analysons les entretiens avec une sous directrice du ministère des finances, deux opérateurs économiques et un représentant d'un service contractant (Banque d'Algérie). Cette analyse permet de comprendre notre thématique qui tourne autour de la digitalisation des marchés publics

### 1.1 Presentation of results and analyses

*Tableau 7 Analysis of the response from the deputy director at the Ministry of Finance*

Axe	Theme	Reply to the deputy director
Axis 01: Digitization of public procurement	Current state of digitalization	The digitization of public procurement in Algeria is incomplete, with a need for increased investment in IT infrastructure to complete digitization.
	Benefits and challenges of digitalization	Digitization offers transparency, time savings and cost reduction. However, improvements are needed to maximize transparency, notably through user training.
	Improving transparency and competition	Increased transparency and reduced corruption are achieved through online publication of tenders, with regular audit systems to monitor effectiveness.
Axis n° 02: Electronic public procurement portal	Portal objectives and benefits	The portal aims to centralize information, simplify procedures and ensure efficient contract management, with strategic partnerships for continuous improvement.
	Encouraging companies to use the portal	Les entreprises sont encouragées à utiliser le portail grâce à l'inscription et la consultation gratuites, et au téléchargement gratuit des cahiers des charges, complétés par des campagnes de sensibilisation.
	SME participation through digitalization	SMEs benefit from equitable access, simplified procedures, and increased visibility of opportunities, aided by mentoring programs to help them navigate the system.
	Positive impact of the portal	The portal has led to efficiency gains, cost reductions and the elimination of paper-based administrative files, with case studies to optimize future functionalities.

	Facilitating collaboration	Collaboration is enhanced by centralized information and integrated communication functions, reinforced by the creation of online forums.
Axis no. 03: Future digitization objectives	Future vision of digitalization	The vision for the future includes the complete digitization of processes, with online submissions and electronic signatures, planned in phases for the transition.

Source: established by the researcher

**Comment:** The integration of digitization into public procurement, as emphasized by the insights from the deputy director in the available data, holds paramount importance for administrative modernization in Algeria. This strategic move towards digitization aims to render processes more transparent, efficient, and accessible, ultimately enhancing competitiveness and curbing costs. Such initiatives are especially critical in a context where transparency and equitable access to economic opportunities are key priorities.

One of the notable initiatives highlighted is the creation of an electronic portal dedicated to public procurement. This portal serves as a centralized hub for information, streamlining procedures, and promoting efficient management practices. It exemplifies concerted efforts to transform and modernize conventional administrative practices within Algeria, aligning them with contemporary technological advancements. Through this portal, stakeholders can access vital information, submit bids, and engage in procurement activities with greater ease and efficiency. Integral to the success of this digitization drive is the emphasis on user training programs. These initiatives are designed to equip stakeholders with the necessary skills and knowledge to navigate digital platforms effectively. By enhancing digital literacy among stakeholders, the adoption and acceptance of digital procurement processes are facilitated, leading to smoother transitions and improved operational outcomes.

Moreover, the implementation of stringent security standards underscores a commitment to safeguarding digital exchanges and data integrity. These security measures are crucial in instilling trust and confidence among users, mitigating risks associated with cyber threats, and ensuring the reliability of digital transactions.

By aligning technological advancements with the specific administrative and commercial requirements of Algeria, this digitization initiative signifies a concerted effort towards achieving a more modern and efficient administration. It reflects a proactive approach to harnessing the potential of digital tools and platforms to drive positive transformations in public procurement, ultimately contributing to enhanced transparency, streamlined processes, and improved overall governance.

Tableau 8 ANALYSIS OF RESPONSES FROM ECONOMIC OPERATORS

Axis	Theme	Response of B.M	Response of K.A
<b>Axis n° 01 : Public procurement In Algeria</b>	Experience in public procurement	Participates in various phases of construction and public works projects.	Participates in various phases of construction and public works projects
	Difficulties encountered	Typing errors, incorrect quantities requiring correction, price fluctuations, exhaustive bureaucracy.	Administrative complexity, rigid selection criteria, intense competition, tight deadlines, cost management, and complex communications with authorities during project execution.
	Bidding strategies	Monitoring prices for materials and services, using software to track costs, preparing clear, compliant proposals.	Careful analysis of requirements, use of software to track costs, rigorous preparation of proposals, meeting deadlines, highlighting strengths.
<b>Axis n° 02 : Digitalisation of public procurements</b>	Knowledge of the electronic portal	Knows and uses the portal, as well as other pay sites for instant information.	Knows the portal and also uses other platforms like DZTENDERS for additional information.
	Follow-up of tender opportunities	Regular site checks, participation in forums and discussion groups.	Regular site checks, participation in forums, newsgroups and subscriptions to specialised platforms.
	Benefits and challenges of digitalization	Fast access, greater transparency, improved efficiency; adaptation to new technologies, frequent breakdowns.	Quick access to information; technical problems, frequent breakdowns.
	Transition to digital platforms	Simplify processes, reduce paperwork, improve transparency and facilitate collaboration with the government.	Greatly simplifies the process, saves time, reduces paperwork, improves transparency, facilitates collaboration with the government.
<b>Axis n° 03 : Future objectives for the digitization of public procurement in Algeria</b>	Willingness to submit offers online	Ready to use the portal for online submissions, recognizes the advantages of speed and ease despite potential drawbacks such as technical problems and data security.	Willing to submit bids online, recognizes speed, reduced paperwork, improved transparency and better traceability, while noting cybersecurity risks and initial complexity.
	Prérequis pour une plateforme de soumission en ligne	Expect impeccable service reliability, a solid structure for managing requests, and assurance of data confidentiality and security.	Expect a user-friendly interface, enhanced security, reliable technical support, and compatibility with various document formats.

	Opinion on the digital bid opening initiative	Positive, to improve transparency and fairness, reduce manipulation and favoritism.	Praises the initiative, foresees improved transparency and fairness, and impartial processing of bids thanks to real-time tracking.
	Advantages of electronic bid opening	Greater transparency, faster, more efficient processes, fewer human errors, better traceability of bids, cost savings.	Increased transparency thanks to electronic recording of steps, reduced human error, faster mail processing, simplified document management, better traceability of bids.

Source established by the researcher

**Commentary:** Examining the digitization of public procurement in Algeria through the lens of economic operators like Bensaid Merrouche and K.A sheds light on a critical shift towards greater transparency, efficiency, and competitiveness. These operators share common experiences regarding the administrative and technical challenges encountered during this transition while also acknowledging the significant benefits brought about by digitization, such as reduced lead times and costs. The adoption of e-portals and other digital platforms is perceived as a means of simplifying processes and enhancing transparency within the procurement landscape.

However, amidst these advancements, concerns persist regarding data security and the imperative need for adequate training among stakeholders. The digital transformation of public procurement necessitates a proactive approach in addressing these challenges to ensure a smooth and effective transition.

One of the key challenges highlighted by Merrouche and K.A is the issue of data security. The shift towards digital platforms introduces new vulnerabilities that must be carefully managed to safeguard sensitive information. Implementing robust cybersecurity measures, including encryption protocols and access controls, is crucial in mitigating risks and building trust among users.

Furthermore, the need for comprehensive training programs cannot be overstated. Many stakeholders may lack familiarity with digital platforms, leading to resistance or inefficiencies in adoption. Tailored training initiatives that address the specific needs and skill gaps of various stakeholders are essential in building digital literacy and competence. This investment in training not only facilitates smoother adoption but also enhances overall efficiency and effectiveness in procurement processes.

To overcome these challenges and realise the full potential of digitization, a progressive implementation strategy is imperative. This strategy should be supported by adequate resources, including funding and technological infrastructure, to ensure a seamless transition. Moreover, ongoing evaluation and feedback mechanisms are essential to identify and address emerging issues, refine processes, and optimise outcomes over time.

In summary, while the digitization of public procurement in Algeria presents various challenges, it also signifies a significant step towards a more modern and efficient administration. By addressing concerns around data security, providing targeted training, and adopting a progressive implementation approach, Algeria can unlock the transformative potential of digital procurement, driving improved transparency, efficiency, and competitiveness in the public sector.

*Tableau 9 ANALYSIS OF THE RESPONSE OF A REPRESENTATIVE OF A CONTRACTING SERVICE (BANQUE D'ALGERIE)*

<b>Axis</b>	<b>Theme</b>	<b>Response of S.M</b>
Axis n° 01: Public procurement in Algeria	Main objective of the call for tenders	The main aim of national tenders and consultations is to carry out development or acquisition projects on behalf of the Bank of Algeria.
	Tender preparation and publication process	The Banque d'Algérie follows internal regulations inspired by the Public Procurement Code. The process includes receipt of the request, translation into specifications, publication and evaluation of bids.
	Transparency and fairness in the bidding process	Publication on platforms accessible to all, invitation of bidders to bid opening, bid opening and evaluation committee to guarantee impartiality.
	Overall efficiency and planned improvements	Review the common letter and thresholds for invitations to tender and consultations, and draw up standard specifications for each project.
Axis No. 02: Digitalisation of public procurement in Algeria	Knowledge of the electronic public procurement portal	Yes, the Bank of Algeria is familiar with the electronic public procurement portal (Bomope, <a href="http://www.algeria-tenders.dz">www.algeria-tenders.dz</a> ) and also uses its own electronic site (Bank-of Algeria.dz).
	Benefits and challenges of digitalisation of public procurement	The platforms enable tender notices to be distributed to several companies. Challenges include selling specifications in cash, lack of familiarity with the platforms and unavailability of electronic signatures.
	Transition to digital platforms	Digitization can happen, but not in the immediate future, blocked by several factors such as cash payments and the intellectual level of certain entrepreneurs.

Source established by the researcher

**Comment:** The move toward digitalization of public procurement in Algeria, aimed at enhancing transparency and operational efficiency, is encountering notable hurdles. While the revamp of tender preparation and evaluation processes signifies a stride towards more accountable management, challenges like the cash sale of specifications and limited digital platform familiarity are impeding progress. A comprehensive strategy is vital for achieving comprehensive and effective adoption, underpinned by ample resources and tailored training for stakeholders. This strategy is pivotal in surmounting initial resistance and ensuring a seamless transition to a modernized and efficient administrative framework. Concurrently, bolstering security protocols and articulating the advantages of digitization are crucial in garnering user trust and stimulating heightened engagement.

The digitization endeavor faces substantial complexities, primarily stemming from entrenched practices and knowledge gaps. Overcoming these barriers necessitates a methodical and phased approach. Initiating with pilot initiatives can serve as learning grounds, allowing for early issue identification and resolution. This iterative process facilitates refinement before wider implementation, fostering stakeholder buy-in and confidence in the digital shift.

Resource allocation must align with the scale and complexity of digitization efforts. Investing in robust digital infrastructure, cybersecurity measures, and ongoing capacity-building initiatives is imperative. Equally crucial is targeted training that caters to varying skill levels, ensuring all stakeholders can effectively navigate digital platforms and processes.

Effective and ongoing communication plays a crucial role in this transformation process. It's essential to clearly communicate the advantages of digitization, such as improved transparency, lower corruption risks, and more efficient operations, to gain support and encourage active involvement. Additionally, highlighting the long-term benefits, such as enhanced decision-making and optimized resource utilization, can foster enduring dedication to digital transformation.

Collaboration with international partners and leveraging best practices from similar digitization journeys can offer valuable insights and accelerate progress. By prioritizing stakeholder engagement, capacity building, and robust cybersecurity measures, Algeria can navigate the challenges of digital procurement transformation and realize its potential for fostering transparency, efficiency, and accountable governance.

## **Section 2 Discussion and proposed actions:**

The digitization of public procurement in Algeria, while progressing, remains a work in progress requiring increased attention and substantial investment. The results of interviews with a deputy director of the Ministry of Finance, economic operators and a representative of a contracting service clearly illustrate the benefits and challenges inherent in this transformation.

**Modernization and transparency:** The deputy director of the Ministry of Finance emphasizes that digitization offers undeniable advantages, such as increased transparency, time savings and reduced administrative costs. The online publication of calls for tenders enables greater transparency and a reduction in corruption, crucial elements for the efficient management of public funds. However, she stresses the need to improve IT infrastructures and train users to maximize these benefits. This observation is in line with the conclusions of AIT YOUCEF Salim's study (2020) on the importance of digitization in ensuring more transparent and rational management of public funds.

**Economic operators' perspectives:** Economic operators Bensaid Merrouche and K.A. share a common vision of the benefits of digitization, while highlighting specific difficulties. They recognize the increased efficiency and transparency brought about by the use of digital platforms. However, they encounter obstacles such as administrative complexity and the slow adoption of new technologies by some entrepreneurs. These challenges are also noted in the literature, notably in studies by Moksit Idriss (2020), who highlights the need for a support strategy to facilitate users' acceptance and use of digital technologies.

**Challenges and solutions for the Contracting Department:** The representative of the Contracting Department, Banque d'Algérie, highlights the rigorous stages involved in preparing and publishing calls for tender. Transparency is ensured by publishing invitations to tender on accessible platforms and inviting bidders to open bids. However, challenges persist, including the sale of specifications in cash and lack of familiarity with digital platforms. It proposes to review internal procedures and develop standard specifications to improve efficiency. This approach is in line with the recommendations of the study by MOHAMMED Belkacem Faiza ZOUAGHI Samia and LEBBAZ Abdelkader (2020), which advocates the simplification of procedures and the continuous improvement of digital services for wider and more effective adoption.

**Transition to digital platforms** The transition to digital platforms, while beneficial, is not without its challenges. Both economic operators and contracting departments report technical problems, frequent breakdowns and data security concerns. The study by Lounes Houda (2022) reveals that Algeria has made significant progress in digitizing public services, but that further efforts are needed to reach a level comparable to that of its regional neighbors. A progressive implementation strategy, supported by adequate resources and targeted training, is essential to overcome these obstacles and ensure a smooth transition.

## **2.1 Electronic transmission, reception and examination of bids:**

In this section, we discuss the various stages of a dematerialized procurement process which are still absent in Algeria.

### **A.Creating an account and download specifications:**

The first step is that the user (the bidder) of the platform needs to create an account where he is going to give the full name, the name of the company, his fiscal number ....

After that the user will have access to see the different specifications and download the one that he wants to apply for

### **B. Electronic submission:**

First of all, you need to make sure that the technical requirements are in place to ensure that the e-procurement portal works properly on the workstations of the contracting departments, particularly for the online opening of electronic bids submitted by bidders. If the technical requirements are properly installed on the public authority's workstation, the e-procurement portal will validate the invitation to tender launched by the contracting department.

Once tenders have been shared, bidders can view, consult and download the documents and specifications relating to the contract. Bidders are advised to read the documents carefully before submitting their bids. Once bidders have prepared their bids, they can complete the online form, download their bids, electronically sign their bids and submit them online via the e-procurement portal.

### **C.Receipt of electronic bids:**

As soon as the envelope is received, the electronic public procurement portal records the date and time of arrival and acknowledges receipt. Envelopes arriving after the deadline are accepted by the platform, but the contracting department is obliged to reject them. The time-stamping function is particularly important, as it offers the same assurance as today's paper receipts issued by the contracting department. It is the public authority's responsibility to take steps to guarantee the security and confidentiality of tenders. In terms of security, the public authority must ensure that the documents received are kept as they are. As for confidentiality, this means that the information contained in the documents must not be accessible to anyone from the moment they are received by the public authority until the members of the bid opening committee are authorized to consult them.

To secure the opening of bids or applications in dematerialized procedures, it is crucial to guarantee data encryption to prevent unauthorized access. Authentication via qualified electronic signatures and digital certificates is essential to verify the identity of bidders and committee members. Each submission must be time-stamped on receipt to meet deadlines, and a detailed audit log must be maintained to track all actions and accesses. Access to the platform must be restricted to authorized persons, with granular permissions clearly defining access rights. Bids must be opened simultaneously online by all members of the committee, with electronic minutes documenting each stage. Post-opening, it is important to archive bids and documents securely, and to set up regular backups. Training users in good security practices and raising awareness of the risks of cyber-attacks are also necessary. Last but not least, compliance with current regulations and the regular submission of the platform to security audits guarantee the compliance and reliability of the process. These measures ensure transparency and confidence in e-procurement.

### **D.Examination of offers:**

The opening and examination of applications and tenders transmitted electronically are subject to the same rules as those applicable to the opening and examination of applications and tenders on paper, and that the operations of opening and examination of applications and tenders on paper, or transmitted electronically, must be carried out together.

In order to maintain the principle of transparency of the procedure, the contracting authority may decide whether and to what extent the continuation of the procedure by electronic means after receipt of the offer from the candidate who decides to submit the application must be specified in the tender documents.

If the public authority wishes to materialize the electronic documents it has received, this can only be done at the earliest possible moment, when applications and bids can be opened. This means that the information on the paper document must be checked for conformity with that contained in the electronic document, and this must be recorded in the minutes of the bid opening committee.

#### **E. Allocation and Communication:**

The award and communication aspects of the digital procurement process are essential to ensure maximum transparency and effective communication. Once the bids have been evaluated, the award decision is made on the basis of the defined criteria, and this information is transmitted electronically to the successful bidders via the digital platform. Details of the award, such as the successful bidder, the terms of the contract and the steps to be taken, are communicated clearly and quickly. What's more, publishing the results on the platform ensures the transparency of the process, enabling other bidders to understand the decisions taken. This digital approach facilitates communication by reducing delays, avoiding transmission errors, and providing accurate monitoring of the award process for all parties involved, thus reinforcing the confidence and efficiency of the process.

### **2.2 The electronic public procurement procedure for contracting authorities and economic operator**

The electronic public procurement procedure revolutionizes traditional procurement by leveraging digital platforms to enhance transparency, efficiency, and competition, providing a streamlined and accountable process for both contracting authorities and economic operators. It begins with planning and preparation, where contracting authorities conduct a needs assessment to define the specifications for the required goods, services, or works, followed by market research to understand available solutions and potential suppliers, and the development of a procurement plan with timelines, budget, and chosen procurement methods. The procurement opportunity is then advertised through a tender notice on the e-procurement platform, along with all necessary documentation, such as the invitation to tender, technical specifications, and evaluation criteria, ensuring potential bidders are well-informed. Economic

operators register on the platform and submit their bids electronically, during which there is a period for queries and clarifications to ensure compliance with all requirements. Submitted bids are then opened electronically, often with oversight to ensure transparency, and are evaluated based on predefined criteria such as price, quality, and technical capabilities, leading to the shortlisting of qualified bidders. The contracting authority makes a contract award decision based on the evaluation results, notifying successful and unsuccessful bidders and publishing the award decision on the platform. This is followed by the electronic signing of the formal contract and ongoing contract management, including performance monitoring and regular reporting through the e-procurement system. The process concludes with a post-procurement review, collecting feedback from both parties to evaluate the procurement process and identify improvement areas, along with audits to ensure compliance with procurement regulations and review the integrity of the process. By using e-procurement systems, contracting authorities can manage the entire procurement cycle more effectively, reducing costs, minimizing corruption risks, and promoting accountability.

In the next table we suggest a solution or how we see the electronic portal of public procurements.

*Tableau 10 Electronic procurement procedure for the contracting authority*

Input	Responsability	Steps	Output
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## **2.3 Upgrading the national legal environment:**

Upgrading the national legal environment is essential to ensure that e-procurement procedures are efficient, transparent and in line with international best practice. This modernization involves a complete overhaul of legislative and regulatory frameworks to bring them into line with current technological standards and the requirements of the digital economy. It includes the introduction of specific laws and regulations to govern the use of electronic platforms, digital signatures and the management of electronic data, thus ensuring the security, integrity and confidentiality of information exchanged. In addition, the legal update must also address aspects of personal data protection, the prevention of fraud and corruption, and the promotion of fair competition. The authorities must ensure that the new regulations are easily accessible and comprehensible to all economic players, including small and medium-sized enterprises, to facilitate their participation in e-procurement. In addition, training and awareness-raising campaigns are needed to inform and educate stakeholders about the new requirements and procedures. By harmonizing the national legal framework with international standards and European directives, for example, countries can attract more foreign investment and boost business confidence in the public procurement system. In this way, upgrading the national legal environment is not limited to legislative changes, but also extends to the creation of an ecosystem conducive to innovation, transparency and economic efficiency.

### **2.3.1 Necessary legal adjustments:**

Necessary legal adjustments are required to adapt the national legal environment to the requirements of e-procurement. These adjustments aim to guarantee efficient, transparent procurement procedures that comply with international standards and best practices. The modernization of legislative and regulatory frameworks is essential, integrating the specific features of electronic transactions such as the recognition of digital signatures and electronic documents. The adoption of laws guaranteeing the security of electronic transactions and the protection of personal data is crucial, including measures to prevent cyber-attacks and ensure the confidentiality of information. Legal mechanisms to detect and prevent fraud and corruption must be put in place, with real-time monitoring systems, regular audits and strict sanctions in the event of violations. Adjustments must also encourage fair competition between bidders, facilitating access to public contracts for small and medium-sized enterprises (SMEs) by simplifying procedures and reducing barriers to entry. It is essential to provide training and awareness-raising programs for economic players and public officials to ensure that they understand and comply with the new legal requirements, as a good understanding of electronic procedures and tools is crucial to their successful adoption. Aligning national laws with international standards, such as the European Union's public procurement directives, can attract foreign investment and boost the confidence of international businesses in the public procurement system. These legal adjustments also require a cultural and organizational transformation to create an ecosystem conducive to innovation, transparency and economic efficiency. By adapting the legal environment to the new digital realities, countries can maximize the benefits of e-procurement and improve their global competitiveness.

### **2.3.2 Complementary Texts**

Complementary texts are essential to effectively frame the implementation of e-procurement and ensure compliance with legal and regulatory requirements. These texts encompass various directives, laws and regulations that specify and complement the main legislative frameworks. They play a crucial role in clarifying processes, securing transactions, and promoting transparency and fair competition.

Among the main complementary texts are data protection regulations, which guarantee the confidentiality and security of personal and commercial information exchanged on electronic platforms. These regulations ensure that data collection, processing and storage practices comply with international standards.

Directives on electronic signatures and digital certificates are also fundamental. They define the conditions under which electronic signatures are considered valid and legally binding, thus ensuring the integrity and authenticity of electronic documents.

In addition, specific texts may govern the management of calls for tender, detailing the procedures for publication, submission, opening and evaluation of bids. These regulations are designed to ensure equal treatment of bidders and transparency of selection processes.

Anti-corruption laws and regulations on conflicts of interest play a crucial role in defining prohibited behavior and applicable sanctions, thus preventing fraudulent practices and abuses of power.

Finally, guidelines on training and capacity building can be put in place to ensure that all players, including SMEs and public officials, are well informed and competent to navigate the e-procurement system. These complementary texts create a robust legal and operational framework for the efficient and reliable implementation of e-procurement.

### **2.4 Implementing the digitization of public procurement within contracting departments and economic operators:**

The digitization of public procurement procedures is an essential initiative aimed at modernizing and optimizing the public purchasing process. However, this transformation requires particular attention due to its novelty, the technical complexity it implies, the financial resources required, and the large number of stakeholders involved.

In order to guarantee the effectiveness of this transition, we recommend adopting a gradual approach, rather than generalizing digitization simultaneously in all departments, for all types of contracts and procurement methods. It is crucial for the public procurement sector to define a clear strategy and a step-by-step deployment schedule.

This gradual process will facilitate the adaptation of the various players in the public procurement chain, such as contracting departments, bidding companies and digitization

service providers. What's more, this approach will enable a more precise assessment of the impact of each stage, enabling the strategy to be adjusted in line with the results obtained.

To implement this digitization effectively, several key phases can be envisaged. Firstly, an in-depth analysis of the needs and challenges specific to the digitization of public procurement is required. This is followed by strategic planning, defining clear objectives, assessing the resources required, and establishing a realistic timetable for the gradual roll-out of digital solutions.

Subsequent phases include piloting and testing on representative samples of public markets to detect and correct any technical problems. Training and awareness-raising of the players involved are also essential to ensure the successful adoption of digitalization. Finally, ongoing evaluation and adaptation of the strategy in line with feedback are necessary to ensure the long-term success of this transition to digital procurement procedures.

To this end, the digitization implementation plan can include the following phases:

Tableau 11 the principal phases to digitalise the public procurements

Phase of the project	Realization
Phase 1 (Already exists )	-Creating of the electronics portal of public procurements -Creating an account for bidders -sharing and downloading the specifications
Phase 02	-Giving different roles for the users of the platform Admin, Contracting service, bidder.... -Having an alignment with the different administrations to eliminate the administrative documents. -Promoting the portal in different channels (tv, radio, social media)
Phase 03	- Online submission for all public contracts. - Online procurement for all lower or lower contracts equal to twenty million dinars (20,000,000 DA) for works and supplies and ten million dinars (10,000,000 DA) for services and studies. -Keep promoting for the portal and explain to the different users how to use the platform and the add it functionality (combat resistance to change)
Phase 04	-Opening of bids in an electronic way -Combat the resistance of change by promoting and convincing the economic operators that the portal is secure and there is full traceability and transparency.
Phase 05	- Online procurement for all public contracts. - Monitoring, control

Source : established by the researcher

Note: The duration of the phases depends on the commitment of the public authorities and the complexity of the project.

# **Conclusion**

## **Conclusion**

The current shift towards digitization of public procurement is a major challenge for our country, requiring a strategic approach and a strong legal framework to ensure its successful and safe implementation. This transformation is not only about adopting new technologies, but also about modernizing processes, improving efficiency and enhancing transparency in public procurement practices.

Our research journey began with building a comprehensive theoretical framework that includes a thorough literature review and a conceptual framework. This foundational step allowed us to gather insights on key concepts related to the digitization of public procurement. We opted for a qualitative approach, utilizing semi-structured interviews to gather in-depth perspectives in line with the research methodology. One of our preliminary findings highlighted that the digitization process in Algeria faces obstacles in terms of efficiency and speed, motivating us to formulate actionable plans and propose solutions to accelerate this important initiative.

One of the primary objectives of our study was to comprehensively assess the current status of public procurement digitization. This involved gathering information from various sources, including interviews, secondary data, literature, and documents provided by participants. We also delved into the legal framework governing public procurement in Algeria and identified key stakeholders and their roles in the digital transformation.

To provide a clear understanding of the e-procurement process, we identified and clarified the different stages involved in the process. This included explaining the functions and processes of eProcurement portals, which are pivotal in facilitating transparent and efficient procurement processes. In addition, we analyzed the legal amendments required to effectively support digitization. This step is necessary to ensure that the legal framework is aligned with technological developments and provides a secure environment for e-transactions.

As part of our research outputs, we developed a detailed implementation plan outlining the stages of seamless integration of digital processes into public procurement practices. This plan was accompanied by step-by-step action sheets designed to guide both procurement departments and economic operators in navigating e-procurement through portals effectively.

Our study contributes significantly to the understanding of the e-procurement process and its implications. By addressing the challenges and proposing solutions, we aim to pave the way for a smoother and more effective digital transformation in public procurement. This research serves as a foundational resource that can inform future endeavors in enhancing digitization efforts in various sectors.

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# **Appendix :interview guide**

## **INTERVIEW GUIDE N°01 (with Finance Ministry)**

Axis n° 01: The digitization of public procurement in Algeria.

- How would you describe the current state of public procurement digitization?
- What are the benefits and challenges of digitizing public procurement?
- How can the digitization of public procurement improve transparency and competition in the contract awarding process?
- What objectives have public authorities set for the digitization of public procurement?

Axis n° 02: The Electronic Public Procurement Portal.

- Can you describe the main objectives and benefits of creating this electronic portal?
- How can public authorities encourage companies to use the electronic public procurement portal?
- How can small and medium-sized businesses take advantage of the digitization of public procurement to participate in calls for tender?
- What are the benefits of adopting the digitization of public procurement for contracting authorities and bidders?
- Have you observed any tangible positive impacts since the launch of the Electronic Public Procurement Portal, such as efficiency gains or cost reductions?
- How has the e-Procurement Portal facilitated collaboration and communication between the various stakeholders involved in public procurement?
- How do you handle technical questions and problems from companies using the platform?

Axis n° 03: Future objectives for the digitization of public procurement in Algeria.

- How do you see the future of the digitization of public procurement processes in Algeria?

## **INTERVIEW GUIDE N°02 (economic operators)**

Axis n° 01 : public procurement in Algeria.

- Can you describe your experience of participating in public procurement procedures? What types of projects or contracts have you generally bid on?
- What are the main difficulties you have encountered when participating in public procurement procedures, both in terms of the bidding process and project execution?
- How do you generally prepare and respond to calls for tender for public contracts? Do you have any strategies or best practices to follow?

Axis n° 02 The digitization of public procurement in Algeria:

- Are you familiar with the electronic public procurement portal? If not, do you use another electronic platform to consult calls for tender?
- How does your company ensure that it stays informed of tender opportunities via the electronic public procurement portal?
- How would you describe the benefits and challenges of the current state of public procurement digitization?
- Can you share your thoughts on the transition from traditional/classical procurement methods to digital platforms such as the government portal, and how do you envisage this digitization improving efficiency, transparency and collaboration between contractors and government entities?

Axis n° 03: Future objectives for the digitization of public procurement in Algeria.

- Would you be willing to submit your bids online via the electronic public procurement portal, and what advantages and disadvantages do you associate with this bidding method for public procurement?
- Are there any technological prerequisites or special requirements you would expect of an online bidding platform for public procurement?
- What do you think of the government's initiative to introduce a digital bid opening method for public procurement, and how do you think this will impact on the transparency and fairness of the public procurement process?

- What do you see as the potential advantages of electronic bid opening over traditional methods?

### **Interview Guide 03: Contracting service**

Axis n° 01: public procurement in Algeria.

- What was the main objective of the call for tenders for the public contract you recently launched?
- Can you describe the process of preparing and publishing the tender, including the key stages and selection criteria?
- How did you ensure transparency and fairness throughout the tendering process?
- How would you assess the overall effectiveness of the tendering process for this procurement? Are there any lessons learned or improvements you are considering for future tenders?

Axis n° 02 The digitization of public procurement in Algeria:

- Are you familiar with the electronic public procurement portal? If not, do you use another electronic platform to publish calls for tender?
- How would you describe the benefits and challenges of the current state of public procurement digitization?
- Can you share your thoughts on the transition from traditional/classical methods of public procurement to digital platforms such as the government portal, and how do you envisage this digitization improving efficiency, transparency and collaboration between contractors and government entities?

Axis n° 03: Future objectives for the digitization of public procurement in Algeria.

- Would you be willing to submit your bids online via the electronic public procurement portal, and what advantages and disadvantages do you associate with this method of bidding for public contracts?
- What do you think of the government's initiative to introduce a digital bid opening method for public procurement, and how do you think this will impact on the transparency and fairness of the public procurement process?
- What do you see as the potential advantages of electronic bid opening over traditional methods?