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THESIS OF FINAL STUDY

Master Management of E-government

**E-government Project Implementation Strategy: Online services
evaluation in Algeria**

**Prepared by:
DEHIMI Ahmed**

**Supervised by:
Pr. Abdelmalik MEZHOUDA**

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Abstract

E-government has become necessary for both developed and developing countries to enhance public services by adopting ICTs and that requires successful strategic planning to achieve effectiveness, efficiency, and transparency. Algeria has been one of the countries seeking to implement a new system through e-Algeria 2013 which is one of the most important development projects. Therefore, this study aims to present the actual state of Algerian strategy including online services, and assess the quality of selected Algerian government web portals. We used a descriptive approach which allows us to analyze and understand our case. This study concludes with a discussion of research results and recommendations.

Key words: e-government, ICT, strategic planning, online services, web portal.

Résumé

L'e-gouvernement est devenu une nécessité pour les pays développés et les pays en développement pour améliorer les services publics en adoptant les technologies de l'information et des communications et cela nécessite une planification stratégique réussie pour atteindre l'efficacité, l'efficience et la transparence. L'Algérie a été l'un des pays cherchant à mettre en œuvre un nouveau système à travers l'e-Algérie 2013 qui est l'un des projets de développement les plus importants. Par conséquent, cette étude vise à présenter l'état actuel de la stratégie algérienne, y compris les services en ligne, et à évaluer la qualité de certains portails algériens e-gouvernement. Nous avons utilisé une approche descriptive qui nous permet d'analyser et de comprendre en profondeur notre cas. Cette étude se termine par une discussion sur les résultats et les recommandations de la recherche.

Mot clés : e-gouvernement, TIC, planification stratégique, services en ligne, portail web.

ملخص

لقد أصبحت الحكومة الإلكترونية ضرورة لا بد منها للدول المتقدمة والنامية على حد سواء لتعزيز الخدمات العمومية من خلال تبني تكنولوجيا المعلومات والاتصالات، وهذا يتطلب التخطيط الاستراتيجي الناجح لتحقيق الفعالية والكفاءة والشفافية. وكانت الجزائر من بين الدول التي تسعى إلى تطبيق نظام جديد من خلال الجزائر الإلكترونية 2013، وهو أحد أهم مشاريع التنمية. ولذلك تهدف هذه الدراسة إلى عرض الحالة الحالية للاستراتيجية الجزائرية من خلال عرض الخدمات عبر الإنترنت وتقييم نوعية بوابات الحكومة الإلكترونية الجزائرية المختارة. اتبعنا في بحثنا هذا المنهج الوصفي الذي يسمح لنا بتحليل الحالة وفهمها بعمق. تنتهي هذه الدراسة بمناقشة نتائج البحوث والتوصيات.

الكلمات المفتاحية: الحكومة الإلكترونية، تكنولوجيا المعلومات والاتصالات، التخطيط الاستراتيجي، الخدمات على الإنترنت، بوابة شبكية.

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List of abbreviations and acronyms:

CNAS: Caisse nationale d'assurance sociale des salariés

EGDI: E-government Development Index

HTTPS: Hypertext Transfer Protocol Secure

ICT: Information and Communication Technology

IT : Information Technology

OSI: Online Service Index

PRINCE: Projects IN Controlled Environments

UN: United Nations

UNDESA: United Nations Department of Economic and Social Affairs

GENERAL INTRODUCTION

Governments all over the world are facing the challenge of transformation and need to reshape the government system to provide efficient and cost-effective services, information and knowledge through information and communications technology. (Georgescu, 2007) The global spread of the internet and the application of ICT in government, besides investing in telecommunications infrastructure and capacity building of human capital, can provide opportunities to transform public administration into a development tool for citizens and a management instrument for societies. During the COVID-19 crisis, ICT played a vital role in promoting people's health and safety and keeping the economy and society functioning normally. Through information sharing and online service provision, e-government technology enabled governments and people to keep in touch during the outbreak. Digital technology also enabled governments to make rapid policy decisions based on real-time data and analysis, enhance the ability of local authorities to coordinate better, and deploy evidence-based services to those who need these services most. The pandemic has shown how much ICT is important when it is properly used for good governance, especially during difficult times. Even if the crisis is over, governments need to accelerate their efforts to embrace technology. (UN, 2020) The development of ICTs and integrating them in modern governments resulted in what we call E-government.

As any project, e-government projects require a well-structured strategy for an effective implementation. *"A strategic plan provides a road map for an organization to move from its current state to its desired medium- or long-term future state"*(Lee & Oh, 2010, p.30). To seize the opportunity of transforming public administration into an instrument of development at the service of its citizens, a comprehensive e-government strategy is needed to collaborate in government and with appropriate external stakeholders. The strategy needs to be closely integrated with the government's overall vision and mission in order to best respond to the need for enhanced cooperation. (UN, 2014) Governments have different strategies to build e-government. Some have created comprehensive long-term plans. Others chose to identify only a few key areas as the focus of early projects. However, the countries considered to be the most successful have begun with smaller projects to build structure. An e-government strategy that is disjointed from the overall organizational mission will not achieve the desired results. (Georgescu, 2007)

Generally, the more administration services are provided online and the more widely used these services, the greater the impact of e-government. Therefore, e-government requires a large number of e-citizens and e-commerce to have a sustainable impact beyond the

efficiency and transparency of the government. To achieve the critical quality of e-government services, it may be necessary to actively move citizens away from traditional channels and turn them to e-government channels which isn't easy. The shift from government to e-government poses a constant challenge of employing increasingly sophisticated web portals as gateways to government bodies, information and services. The high quality of these portals is essential for the successful adoption and use of e-government. (Ziamba & al., 2014, p.1259)

As for the Algerian case, the real e-government project was launched in 2008 as part of the e-Algeria 2013 project by the Ministry of Post and Information and Communication Technologies, yet the citizen did not feel and experience the real modernization of the public administration until 2015 when the process experienced an unprecedented acceleration, through a series of measures aimed at improving the public service by streamlining administrative procedures, decentralization of biometric records and the generalization of electronic administration. In addition to the excellent experience of the Ministry of the Interior, other ministries, especially the Ministry of Justice, Finance and Higher Education, have indeed participated in the project of dematerialization of administrative services and procedures. (Mezhouda, 2018)

- Objective of the research: Due to the importance of ICT and its impact on governments, the aim of this study is to emphasize the key elements to elaborate an e-government project strategy, give a holistic view of some Algerian key sectors governmental online services at the current time then evaluate their online portals to show the improvements that can be made.
- Research questions: In order to achieve these objectives, we formulated the research question as follows:

What progress did the Algerian e-government strategy achieve in terms of online services?

From this question, we can derive the following sub-questions to frame our research:

- What is an e-government project and its strategy?
- What are the stages that an e-government project goes through?
- What is the current status of Algerian government online services?
- At what stage of maturity are Algerian government e-portals?

- The methodology: To address our research question, qualitative method will be used based on documentary research, observation through consulting e-portals and evaluating them, collecting existing data and at the end reach a set of conclusions and provide recommendations.
- Research field: Due to the Covid-19 pandemic and the critical importance of online services, we decided that our research will be on online portals of Algerian key sectors (Ministry of Justice, Ministry of Interior, Ministry of Commerce, National Social Insurance Fund, Wilaya of Algiers)
- Relevance of the research: The relevance of the study is due to the tremendous technological developments in the ICT field, where there appears to be an urgent need to keep up with the current trends of globalization and the digital economy to carry out the work electronically, and the e-government is one of those trends that seek to invest in ICT to provide various electronic and online services. The study also deals with the reality of what the Algerian government is experiencing and what it has achieved in terms of e-government project implementation strategy through available online services and that's what make our subject important to study.
- The announcement of the plan: In order to address the topic and answer the questions raised, we established the following research plan. This thesis is divided into 3 main chapters:

The 1st chapter "theoretical frame" is sectioned into "literature review" and "conceptual framework" in which we demonstrated different aspects about the theme. This latter is divided into 3 sections that are "e-government and its projects", "e-government system stages", and "e-government requirements and challenges"

The 2nd chapter is "research methodology" in which we explained the methodology followed to elaborate this research.

The 3rd chapter named "outcome and discussion" is sectioned into "Algerian engagement in e-government", "E-portals evaluation", "results discussion" and "suggestions", in this chapter we aimed to analyze the Algerian current situation in terms of e-government and online services in general and specifically evaluate online portals, then suggest some solutions to enhance the sector.

**CHAPTER I:
THEORETICAL FRAMEWORK**

The purpose of this first chapter is to present the literature review and the conceptual framework related to strategy of e-government projects and its implementation. To do this, we will proceed in two stages. First, we present the literature review which contains articles of several researchers that address e-government strategy implementation with requirements and challenges accompanied by online portals evaluation. Secondly, we will present the conceptual framework that contains all the key concepts related to our theme.

literature review

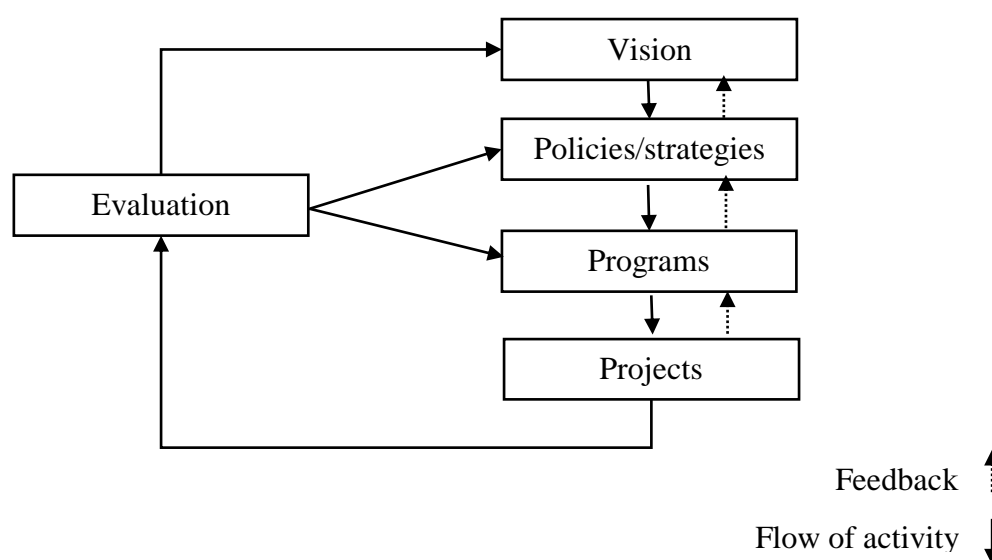
E-government is a rapidly-growing phenomenon. Its impact on the work of the public sector is growing. It has absorbed more and more public sector budgets. It promises a solution to many public sector problems. (Heeks, 2006) The author says in his book *"implementing and managing e-government"* that e-government systems are information systems, because they process data and provide information to support transactions and decision making, together with other factors such as management, human resources, politics, IT vendors, culture and so on; and that any e-government system should correspond to 4 core stages: analysis of the current situation and why should we adapt the new system, designing the new system, construct the new system and finally implement the new system.

Dr. Inderjeet Singh Sodhi in his article *"Application of e-government in developing countries (issues, challenges and prospects in India)"* briefly determines the strategic issues for realization of e-government and lists key strategic factors that are suitable for planning, designing, development and implementation of e-government. The author concluded that the implementation of e-government projects should be based on plans and reforms. These plans and reforms should determine goals, principles, strategies and implementation stages, and coordinate with the tools and success factors that may be provided. Facing the challenges of e-government requires a well-categorized government information database and appropriate web portals. Reform and innovation are very useful for e-government projects in developing countries. What is needed is to design and develop e-government projects that is focused on the process of representing the systems, processes, and information technology that constitute e-government.

Like developed countries, developing countries have embarked on e-government initiatives in their modernization activities. Despite efforts, the implementation of e-government in developing countries is still considered insufficient. Mkude & Wimmer realized an analysis entitled "E-government Systems Design and Implementation in Developed and Developing

Countries: Results from a Qualitative Analysis" based on interviewing 20 experts from developed and 21 from developing countries and they concluded that developing countries are still far behind developed countries, but they can learn from the experience of developed countries to achieve more successful e-government, efficiency, collaboration and success by applying a certain strategic framework of designing e-government and adopting a series of measures to improve quality. The strategic framework was proposed in another article of the same authors, named "*Strategic Framework for Designing E-Government in Developing Countries*" after asking the following: whether guidelines exist to develop e-government solutions with the goal of public value generation in mind. The proposed strategy framework was based on 5 dimensions: vision, policies/strategies, programs, project, evaluation.

Figure 1: Strategic framework for e-government projects



Source: (Mkude & Wimmer, 2013, p. 156-158)

Yet the authors find that there is still a lack of a comprehensive framework that enables developing countries to design e-government systems while generating public value, in addition, developing countries face many political, social, cultural, economic and technological challenges, such as insufficient support for political leadership, illiteracy in ICT, cultural resistance, limited financial resources and lack of infrastructure.

Based on the research of Alshehri & Drew and the article of Singore & Chesi & Pallotti in which they both discuss advantages and challenges of e-government implementation, it's said that e-government evolves and posits four stages of growth model which are:

- 1- Information phase: is the first step to implement e-government, despite the different names assigned to it (publish, cataloguing, presence, emerging and information publishing), it means that administration creates websites in order to provide citizens with various information about services.
- 2- Transaction phase: in this phase the communication is in two-ways, which means that citizens of other parties can perform transactions so they move from passive to active role, and government on the internet becomes an active respondent that provide transactional services such as electronic documents, filling out forms, online payment...etc
- 3- Vertical integration phase: In the vertical stage, local state, and central government are connected for different government functions or services, so citizens can access higher-level government services from the same entry as the municipal portal because the local system is directly connected to the higher-level system. In other words, the central and local systems should be connected or at least communicate with each other. Vertical integration goes beyond this simple interconnection. If a citizen conducts a transaction with any administration, the transaction information will be displayed up or down to the corresponding counterparty. Systems at all levels are connected and communicate with each other so that the transaction results of one system can be exchanged with another system. Physically speaking, this can be integrated into a central database or a network of database connections that communicate with each other.
- 4- Horizontal integration phase: in this phase, systems are integrated across different functions and services. From the perspective of citizens, the full potential of information technology can only be realized by horizontally integrating government services among different functional departments, because usually citizens who need government assistance need multiple services. So, this phase aims to fully integrate electronic service delivery from various organizations into a single portal. The citizen can then benefit from a single point of entry to apply for a service that requires the cooperation of several organizations. This type of service portal is called the inter-organizational “one stop shop”.

When speaking about challenges, the authors mention that e-government faces many challenges and obstacles at many levels and through the whole process of implementation especially developing countries, resulting in slow spread of e-government initiatives. Some challenges have their roots in socio-economic conditions or cultural orientations of the

region, including poor political, organizational, and infrastructural factors so we categorized them into 4 categories: technical challenges, economic challenges, social challenges and organizational challenge. Despite challenges, (Heeks, 2006) mentions in his book that most e-government projects fail. They are either total failures, in which the system is never implemented or is implemented but immediately abandoned; or they are partial failures, in which major goals for the system are not reached and/or there are significant undesirable outcomes, only a minority of e-government projects can be properly called successes.

To evaluate online portals, a study was conducted by Ziemba, Papaj, Descours under the title "*Assessing the quality of e-government portals – the Polish experience*", and was based on ISO/IEC 25010 software product quality model that contains 8 dimensions (Functional suitability, Performance efficiency, Compatibility, Usability, Reliability, Security, Maintainability and Portability) in which they compared three popular Polish e-gov portals to measure their quality and how they can be improved. After analyzing websites, authors found that the time of resolve the matter initiated electronically is not shorter than of the matter initiated in a traditional ways as it is for costs that cost much less. All portals are integrated with different e-gov portals and back-office information systems. All examined e-gov portals have intuitive interface, easy navigation systems. none of the portals is accessible for the blind, they do not offer voice messages, and there are also no foreign language versions of the portals. All portals are protected against non-standard behavior of users. The study was much more of a best practice and instrument for those in need for the proposed framework that helps provide some enlightenment that can lead to improvement of e-government online portals.

In the same context, Khalid & Lavilles did a study on maturity level of websites in the municipal and city governments in the Philippines and identified the issues associated with its e-government development. The paper named "*Maturity Assessment of Local E-government Websites in the Philippines*", 150 local government websites were assessed based on the model's online service component, and the evaluation was based on the UN e-government maturity model which is 4 levels of maturity that are: emerging services, enhanced services, transactional services and connected services. The authors of the article found that several of the local governments are still on the emerging stage.

The highly urbanized cities, most of their websites are already on enhanced stage and none reached 3rd nor 4th level. Moreover, one of the reasons for the lagging development of

e-government is the lack of technical infrastructure and skills, organizational problems, and lack of government regulations. And they said finally that the government should be able to provide the public with services online such as application, transactions and other forms of citizen engagement.

As for the Algerian case, Pr. gheyat & Khettaf "*Algeria's move toward the implementation of e-government through e-Algeria's Reality and challenges project 2013*" in this article use an analytical descriptive approach in order to discuss the reality of Algerian progress in terms of e-government by analyzing ICT indicators from 2010 to 2016 in which they declare that Algeria has not reached the required level in the field of information and electronic transactions, and e-government projects are still very late compared to other countries, although more than 05 years have passed since the launch of the e-Algeria 2013 project with efforts of the state. There seems to be much obstacles like the high cost of investing in information technologies, especially in the long term, delayed circulation of electronic transactions, dominance of traditional concepts, especially bureaucracy and much more. Authors concluded that electronic services in Algeria are still at a starter level, and are growing slowly compared to other countries, there is a high rate of e-illiteracy and legislation controlling e-government is ambiguous.

In addition, Zouari and Draou in their article "*The strategy of establishing an e-government in Algeria: from idea to application*" after asking how can a country like Algeria move from traditional government to e-government under current administrative, social and economic constraints? Came into conclusion that there is still a critical need to develop a mechanism to market e-government services in such a way as to ensure that these services are accessible to all segments of society in an appropriate manner and without any burdens on the citizen. This mechanism includes intensifying marketing campaigns to reduce the digital divide, especially in accepting e-government programs and raising awareness of the importance of services provided, in addition to preparing and qualifying qualified technical seniors through the establishment of an e-government academy that will train and train users of e-services in addition to providing technology at reasonable prices to citizens.

Therefore, our research will be based on this literature review among other information gathered in order to discuss the progress achieved by the Algerian e-government strategy and evaluate online portals to contribute more or less in further researches or initiatives to improve our e-government portals and online services.

Conceptual frame

1 E-government and its projects:

In this section we'll give an overview of e-government therefore we will talk about elements of an e-government project from its strategy to its governance.

1.1 The e-government strategy :

1.1.1 E-government and its advantages:

The United Nations ([UN], 2014, p. 02) defines E-government as “the use of ICT and its application by the government for the provision of information and public services to the people” (Global E-Government Readiness Report 2004). More broadly, e-government can be referred to as the use and application of information technologies in public administration to streamline and integrate workflows and processes, to effectively manage data and information, enhance public service delivery, as well as expand communication channels for engagement and empowerment of people.

E-government helps simplify processes and makes it easier for public sector agencies and citizens to obtain government information. According to (Alshehri & Drew, 2011, p. 81-82) e-government advantages and benefits are:

- Reduction of customers and organization's time, effort and costs.
- Improvement of service delivery and citizens satisfaction.
- Increase of users' ICT skills, internet knowledge and computer usage.
- Creation of new business and work opportunities
- Improve efficiency of government agencies in processing of data
- Improve services through better understanding of users' requirements, thus aiming for seamless online services.
- Sharing information and ideas between all government agencies and department to build one mega data base.
- Assisting a governments' economic policy objectives by promoting productivity gains inherent in ICT and e-commerce.
- Improving transparency, accuracy and facilitating information transforming between government and customers.

- Helps in building trust between governments and citizens, an essential factor in good governance by using internet-based strategies to involve citizens in the policy process, illustrating government.

1.1.2 E-government strategy and its elements:

Many countries and governments at national and subnational levels have defined their e-government or government transformation strategies within the context of creating a citizen-centric, innovative, and integrated government (e.g., Uk, Singapore, Australia). Over time, these visions and strategies have been extended to incorporate elements of e-governance, high performance, and world class government (e.g., India, Saudi Arabia, Abu Dhabi, Jamaica) and also importantly its contribution to national prosperity (e.g., Nigeria and Norway). These strategies accommodate ICT infrastructure expansion (often triggered by intended government use) and e-government as well as elements of public sector reform and modernization. The master plan can be thought of as operating in multiple tiers and can even consist of separate documents. At the most conceptual level, there will likely be a strategic vision – a document that sets out overall goals and objectives for e-government, or which defines the application of ICT to any relevant government initiative – embedding the strategy within other key government policies. This strategy might then be the basis for an action plan. (*infoDev*, 2009, p. 27-28)

The design and development of a strategy and/or an action plan is an opportunity to involve public, private and civil society stakeholders, and to crowd source the objectives to be achieved and policy actions to be undertaken by the government. The inclusive design and development of these policies can serve to generate consensus among different policy agents, promoting co-ownership and a sense of shared responsibility for the projects and initiatives envisaged. It also enables synergies to be identified and adopted between existing strategies or actions.

Experience has shown that designing strategic plans within the broader context of information society strategies (and national development plans) can enhance coherence with relevant government policy priorities, such as telecommunication infrastructure, Internet accessibility, digital literacy and digital inclusion. In light of this body of learning, e-government strategies can be grouped into two main types: 1- those created under the umbrella of broader information society policies; and 2- those that only establish a vision and lines of action in the area of digital government. (OCDE, 2018, p. 79)

In order to establish an e-government strategy, it should answer these questions:

Table 1: Common elements to the national and subnational strategies

Composite of a High-Level Strategy	
The DESTINATION	<ul style="list-style-type: none"> • Vision
The WHY	<ul style="list-style-type: none"> • Mission
The WHAT	<ul style="list-style-type: none"> • Networked Society • Public Service Delivery – Improving Access and Services • Citizen Participation, Engagement, and Inclusion • Technology Capabilities and Infrastructure • Contribution to Social and Economic Development, Competitiveness • Capacity Building, e.g., e-Government Building Blocks • e-Government/CIO leadership roles, structures, responsibilities, and whole-of-government assets • Training and development of politicians, public sector policymakers, broad employee base, and ICT/e-Government practitioners • Information, Intelligence, and Knowledge Management • Enabling Environment – Legislation, Business Model and Architectures, Policies, Security, Controls • Government structures and organizational developments, e.g., shared services, Centers of Excellence
The HOW	<ul style="list-style-type: none"> • Priorities, Principles, Methods, and Funding (incl. PPPs) • Implementation Plan
By WHEN	<ul style="list-style-type: none"> • Measurement and Reporting Timeline
The WHO	<ul style="list-style-type: none"> • Coordinating and Collaborating Structures, Relationships, and Accountability

Source: (infoDev, 2009)

So as from what we can see, the e-government strategy is a plan for the e-government system and its supporting infrastructure, which can maximize the management's ability to achieve organizational goals. Nowadays more and more public institutions are developing e-government strategies.

However, e-government strategic planning faces some issues and even failures due to misconceiving the strategy or not having a strategy at all by public sector organizations which means applying strategy never started. The lack of support to the strategic approach can cause:

- e-government systems being created without consideration for overall organizational objectives
- outdated systems still in use due to inability to plan alternatives
- data that cannot be shared between different e-government systems because there are no organization-wide standards
- IT being seen as the end rather than the means, in other words, when e-government is seen as an end in itself
- no clear locus of responsibility for dealing with these problems (heeks, 2006, p.44)

On the contrary, the presence of an e-government strategy at the national level helps to enhance adoption, to ensure political support at the national level and to provide a national framework for implementation of strategic objectives and its impacts are: (Mkude & Wimmer, 2013, p.49)

- Cost savings due to a centralised structure of planning and implementing e-government;
- Comprehensive and consistent provision of public services across the country;
- Enhanced assurance that the implementations are directed towards achieving the goals and objectives of the strategy;
- A unified approach towards implementing e-government;
- Enhanced coordination and collaboration in achieving the objectives of the strategy.

1.1.3 E-government strategy stakeholders:

There is general agreement that the public sector is complex and involves a variety of stakeholders and that this inherent complexity is translated into the e-government arena.

E-government projects are characterised by many stakeholders with multiple value dimensions (financial, social and political), but argues that few e-government studies adopt a multi-dimensional perspective incorporating all value dimensions and relevant stakeholders.

Freeman's definition of a stakeholder is: "*a stakeholder in an organization is (by its definition) any group or individual who can affect or is affected by the achievement of the organization's objective*". (Freeman, 1984, p.46) Stakeholder theory encourages the identification of stakeholders and the development of stakeholder typologies.

Not all stakeholders are equal, and there is discrimination in the extent to which the claims of different stakeholders are acknowledged, on the basis of the relative power, legitimacy and urgency of the claims of the different stakeholders. Stakeholder theory also encourages consideration of competing perspectives, objectives, and claims, the conflicts that arise from these differences, and the processes whereby these differences are 'negotiated'. On the other hand, the classical way of modelling stakeholders is by presenting a focal organization or project at the center of a nexus of stakeholders, whereas in e-government it is also important to understand and model stakeholder-to-stakeholder relationships. For e-government the most appropriate way of segmenting stakeholders is in terms of 'roles' rather than as 'groups'. This is because it is important to acknowledge that in e-government both individuals and organizations can play several roles, either concurrently or in sequence.

In addition, stakeholder positions, particularly in the public sector, may change over time. This means, for instance, that whilst stakeholders to, say an e-government project, may have different long-term objectives, their short-term objectives may incidentally align in specific contexts or over short periods of time; these changing positions present further interesting challenges for stakeholder management and engagement with e-government. (Rowley, 2011, p.54-55)

So, the stakeholders involved in the success of e-government projects are (by roles):

- **Leadership:**

Leadership for e-government programs is provided by the political and bureaucratic head of the department. Like all other fields, leadership is an important aspect of e-government. The commitment of top leadership is important for e-government. The leadership provides the role of reformers who will help the e-government initiatives sail through.

The leadership may as well come from the private sector wherein the private partners may drive the whole initiative for the government. Despite the importance of technological and skill infrastructures, it is the politics of e-government initiatives that probably hold the key. E-Government projects have made slow progress in many countries because they do not serve the self-interests of the major stakeholders, particular senior public officials.

- **Internal Employee:**

Government employees are on the forefront of the change which e-government programs bring in the working and services of the government department. Implementation of e-government program means that they will have to learn new things. Employees may resist certain initiatives as they are working in their comfort zones for years and rarely appreciate a change in job profile. The computerized system will lead to further transparency and lack of discretion by individual officials who work on these systems. Therefore, some employees fear a loss of power and resist change. The quality and commitment of local government staff will play a major role in the success of any e-government initiative. Staff can be viewed as the actual implementers of any new e-government policies or programs. It comes out that there are three things that could stop implementers from completing their assigned tasks. Two that are relevant to this discussion are dispositional problems, when implementers do not want to do what they are supposed to; and capability problems, when implementers are not able to do what they are supposed to do.

- **Information Technology Department:**

Most of state governments have a dedicated IT department, which overlooks the implementation of the IT programs. They are very important stakeholder because this department acts as interface across multiple e-government initiatives being taken across the state. IT department is part of the team which reviews the IT strategy plan for each department and then approves the long-term road map for each department and overall state. The role of this group is very important to ensure that proper knowledge management tools are used and experience gained in one program is shared across other programs so that same mistakes don't happen again.

- **Information Technology Service Providers:**

IT service providers have experience of executing large transformation programs in global markets and these companies should bring that experience in execution of large e-government programs.

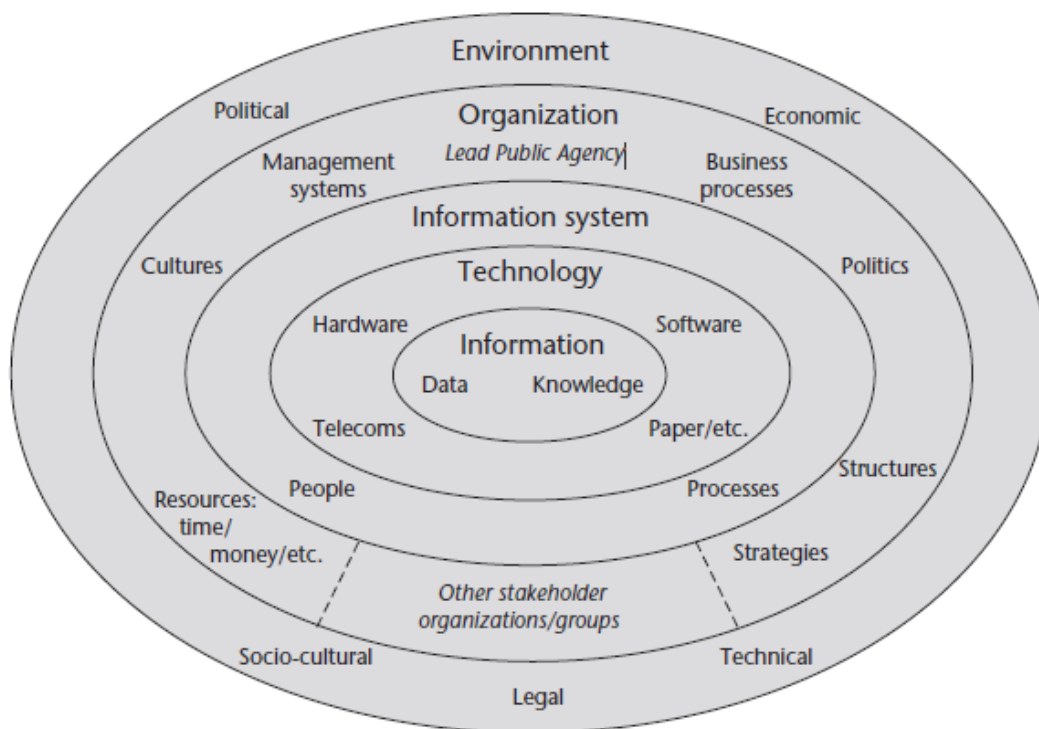
IT professionals may prefer to work for global customers and e-government programs may not be getting the best professional for executing these programs. (Goel & Al, 2012, p.4-6)

1.2 The e-government project:

1.2.1 Definition of e-government project:

E-government refers to office automation and internal management information systems, expert systems, and customer-facing websites. For e-government to be a working information system, it must be seen as much more than just the technical elements of IT. Instead, it must be regarded as composed of technology, information, the people who give the system purpose and meaning, and the work processes performed. An e-government project is a project of modernization and development of different government services, this kind of projects is subject to many factors categorized into 5 sections (information, technology, information system, organization, environment).

Figure 2: Full model of e-government systems



source: (Richard Heeks, 2006, p.4)

To understand more from the previous figure 2, we can refer to some of the basic key items:

- **Information:** The formal information held by the digital system and also the informal information utilized by the people involved the system.
- **Technology:** Mainly focuses on digital IT but can also cover other information handling technologies such as paper or analogue telephones.
- **Processes:** The activities undertaken by the relevant stakeholders for whom the e-government system operates, both information-related processes and broader business processes.
- **Objectives and values:** Often the most important dimension since the objectives component covers issues of self-interest and organizational politics, and can even be seen to incorporate formal organizational strategies; the values component covers culture: what stakeholders feel are the right and wrong ways to do things.
- **Staffing and skills:** Covers the number of staff involved with the e-government system, and the competencies of those staff and other users.
- **Management systems and structures:** The overall management systems required to organize operation and use of the e-government system, plus the way in which stakeholder agencies/groups are structured, both formally and informally.
- **Other resources:** Principally, the time and money required to implement and operate the e-government system.

1.2.2 Specificities of e-government projects:

The following functions describe countries where e-government projects have been successfully implemented worldwide. E-Government should be implemented with these specificities:

- **Comprehensive:** To the greatest extent possible, citizens should be able to cooperate with their government through one e-government portal.
- **Integrated:** All e-government applications should be integrated with each other, so citizens can avoid the need to provide the same data over many times, and the government can save time and money without re-entering data.

- Ubiquitous: A jurisdiction's e-government portal and its connected sites and applications should be available from any Internet connection, Internet appliances.
- Transparent/Easy to Use: E-government sites should be designed and operated so that the most novice computer users can readily find the information they need, provide the information requested by the government agencies with which they are dealing, and otherwise perform all e-government transactions.
- Accessible: The design and operation of e-government systems should, from the ground up, take into account the special needs of the disabled, and make it possible for them to use these systems as easily as the non-disabled.
- Secure: E-government systems need to protect the citizens' data's confidentiality, the records created and stored by the government, as well as the content and existence of citizen-government transactions performed via the Internet.
- Private: Data about citizen-government transactions, and the content of those transactions, needs to be strictly protected by the government.
- Re-engineered: It is not enough to replicate electronically the administrative processes and procedures currently in place. It is necessary to thoroughly re-evaluate the overall mission of the jurisdiction and then design a digital structure that creates a government-citizen interface that simplifies and streamlines each transaction individually and the entire process of government administration generally.
- Interoperable: An excellent e-government website is a website that provides appropriate and up-to-date links to other e-government websites on its own and other levels in the government hierarchy. All e-government sites need to work together seamlessly.
- Be Developed to E-governance Systems: Developed from e-government, E-governance systems can just as easily implement democratic process, e-making of or policy, building up e-community. E-government serves not only as a means of administration, but also as a primary tool of collective and democratic decision-making, and participation for society. (Zhiyuan Fang, 2002, p. 12)

1.2.3 Governance of e-government projects:

The World Bank defines governance as the traditions and institutions by which authority in a country is exercised for the common good. This includes:

- the process by which those in authority are selected, monitored, and replaced.

- the capacity of the government to effectively manage its resources and implement sound policies.
- the respect of citizens and the state for the institutions that govern economic and social interactions among them.

Governance of the planning and implementation of a national e-government strategy and associated infrastructure, capacity building, and service projects should be embedded in each jurisdiction's and each ministry's, department's, and agency's decision-making processes, roles, and structures. The more mainstreamed the organization and governance of e-government, the greater the probability of success. In this way "e" applies to engaging 'everyone', and ensuring that all key leaders and managers accept responsibility for the implementation of e-government, not only the experts in e-government or the information and technology specialists or project managers.

A study done by (OCDE, 2018, p. 41) on 35 countries says that country approaches to the governance of national e-government strategies vary from case to case. The steering of strategy development is often done by a ministry or organization that is not exclusively responsible for digital issues; in fact, only a minority of countries have, to date, entrusted this mission to a ministry or organization dedicated to digital. In almost all countries, private stakeholders and public bodies are involved in the process of developing national e-government strategies. Against all expectations, only a few countries (Austria, Luxembourg, Mexico, the Slovak Republic) appoint a single high representative, for example in the Prime Minister's Office, the Presidency, or a ministry or an organization dedicated to digital technology, coordinate their national e-government strategy. However, the development and implementation of a national e-government strategy using a whole-of-government approach cannot be achieved without effective coordination. In the majority of countries, the implementation of national e-government strategies is the responsibility of several ministries, agencies, or institutions. In some cases, several stakeholders are involved at this stage. The bodies responsible for monitoring the implementation of the strategies are generally those responsible for their development and coordination.

The governance of specific e-government projects needs to be aligned with the national strategy, the connection is achieved through a leadership and coordination committee and a reporting framework that can monitor delivery time, budget and expenditure, and scope, and is consistent with approved changes and the overall project plan.

A number of countries and jurisdictions have adopted international standards for project and program management to ensure consistency of approach which provides greater likelihood of success. PRINCE 2 was initially developed in 1989 by the UK Government for information systems (IT) project management. It has become a de facto standard for project management in the UK and more than 50 other countries. Access to expertise and skills in these disciplines can be gained through a mixture of staff development and contracting, and in some cases, organizations have engaged companies to provide the Program or Project Office and all associated management disciplines and standards as a capacity building investment.

Establishing and recruiting the project team is a fundamental step. Depending on the size and nature of the project, the project manager should have an experienced team comprising people with skills in policy development, business analysis, process reengineering, architecture, IT (various domains), communication and marketing, stakeholder management, training, finance and budget control, administration, and reporting.

The methodology to be selected for individual e-government projects can vary according to a range of factors: the type (e.g., service, infrastructure), number of agencies involved, policy and process complexity, and level of technology required. The range of methodologies includes waterfall, spiral, agile, and iterative development. In addition, related management disciplines associated with risk and issues management, quality management, sourcing and procurement, financial management, stakeholder management, change management etc., strengthen the e-government project's implementation and integration process. International standards can be adopted rather than designing from scratch, although the majority of the effort is in the process of learning and applying these disciplines or processes. (*infoDev*, 2009, p. 37-38)

2 E-government system stages:

An e-government project is a complex project that needs careful planning, effective implementation and performance reporting, it is more about government than technology, and may require substantial changes to many elements of government (roles, permissions, processes, and final structure). In this section we'll present the different stages to establish an e-government project.

2.1 Designing:

Designing and sustaining e-government systems requires rigorous consideration of political, economic, technological, social, cultural and legal status of the country. Such prerequisites impose significant design challenges, which have to be faced by developing countries. Most developing countries suffer from emerging economies, high corruption, political instabilities, unclear legal structures and diverse social and cultural norms, which greatly contribute to the challenges of designing e-government systems. (Mkude & Wimmer, 2013, p. 154)

All the aspects of e-government policy - from policy design to decision making to implementation and evaluation - are of vital importance with scarce resources financial, technological, skilled manpower. Designing e-government projects are sensitive to societal context. The focus on e-government has shifted from the infrastructure and technical aspects to organizational adaptability, strategy, process change, administrative skill and the ability for citizens to access public services to interact with government agencies/bodies. It has been found that several e-government projects were deployed without carrying out the financial feasibility and financial sustainability of the project. (Inderjeet, 2016, p. 96)

A certain framework is proposed by (Mkude & Wimmer, 2013, p. 156-158) that consists of the following:

1- Vision:

The vision is a long-term view of the desired position of the organization and serves as the overall guiding principle of the organization, so it raises the importance of clarifying the vision statement before starting work. The vision statement provides the basis for achieving certain goals. In e-government, statements define the state of the government after a period of time. Each country has its own vision, reflecting national priorities, economic and political background.

2- Policies/Strategies:

Policies and strategies describe a series of commitments to take action to achieve the vision statement. They define detailed implementation goals that reflect the overall vision. It also defines the political, economic, social, cultural, technical and legal prerequisites necessary for implementation. Risks and risk management are also defined in policies and strategies. The application of ICT in the public sector brings some risks, such as organizational risks. Therefore, these issues should be addressed when formulating policies and strategies. Other aspects of implementation, such as change management public-private partnerships.

The organization and business structure are also defined at this stage. E-government policies and strategies across the country are very important, and can coordinate implementation from the national to the local level. The significance of this consistency is to ensure reusability and interoperability between solutions, traceability, monitoring and evaluation of resources at all levels.

3- Programs:

Programs must reflect the objectives described in policies and strategies. A program contains implementation approaches adopted in projects in the next step. Recognizing that the scope of government transformation through information and communication technology is wide and resources are limited, it is important to develop a series of programs to monitor the implementation of the project. The first purpose is the ability to prioritize implementation of projects. Several e-government projects working towards dependent objectives and goals in certain program provide the ability to prioritize them. The programs ensure that the projects are prioritized according to available financial and human resources, benefits and impact. The second purpose is careful planning of resources. Due to scarce resources available in developing countries, a series of programs ensures that for each program there is definitive amount of resources dedicated, and risks from one program can be transferred to subsequent programs. The third purpose is the high level of traceability among projects in programs. Management of programs becomes more viable as compared to scattered implementation projects working towards diverse objectives and goals.

4- Projects:

Programs are implemented in projects. Each project is implemented towards certain detailed objectives and goals reflected in a program. And such objectives must also reflect the overall national e-government vision. The most preferable implementation approach in projects is through pilot projects with considerable scope. The significance of this approach is to minimize risks, measure benefits of projects in early stages, assess the demand of initiative from stakeholders and learn lessons for future projects. Adopting concepts and practices from Information Systems field, implementation of projects consists of activities such as requirements gathering and analysis, design approaches, development, implementation and monitoring and evaluation.

5- Evaluation:

In order to best measure value added and progress, if the results of the project are consistent with the overall vision, goals and objectives of the policy, strategy, and plan, then evaluation is an important aspect.

2.2 Implementing:

Implementation and successive upgrading of the e-government system follow certain paths, levels of maturity, stages, or phases. Different countries implementing e-government in their ICT framework certainly have different missions and objectives; however, the gradual development of an e-government system in any country follows some unique levels of service maturity for evolution. Each of the service levels represents a different service pattern, different levels of technological sophistication, different stakeholder orientation, different types of interaction, different security requirements, and different reengineering processes. It can also be inferred that these levels describe the development of maturity of service in a sequential manner. We can define levels of service maturity of e-government as the pattern of service that a government develops, successively enhances interactivity, and delivers for stakeholders' acceptance and usage with upgrading of technological sophistication and functional characteristics. The first two functionally different levels of maturity of service development of e-government: the static stage and the interaction stage. These two levels are widely developed in most of the countries. The third level is described as transaction stage. However, most of the countries are still struggling to attain this e-government service level, so this stage is not considered for developing any comprehensive model. The next stages of service maturity, such as vertical integration and horizontal integration, these stages are not fully achieved by most of the countries so far. Most countries have failed to realize horizontal stage of e-government universally across all public services in their countries. From the end users' perspectives, the two stages of services have significant differences in characteristics and functionality. In the publishing or static stage, stakeholders can only view and collect government information or download some forms and publications. This is one-way communication. Here the user cannot communicate with the government service system through this interface and the government authority does not respond to the user electronically. In the next maturity level of service—the interaction phase—two-way communication is established. Through the government web page, at this stage, stakeholders can contact service providers to resolve any issues in different electronic ways, such as sending emails, using chat-room, etc. However, differentiating and defining

these two stages as gradual service maturity of e-government don't mean that citizens use or adopt these stages of e-government sequentially, first static level and then interact level. They can simply skip any beginning level and start adopting e-government from the next matured level. It can be predicted that the various development levels of e-government might differ in pursuing the intention to adopt e-government for its successful implementation. Static and interaction levels especially offer different modes of service with different levels of association of technology. As a result, adoption criteria for different stages by citizens might have significant implications. (Shareef & al, 2011, p. 18)

However, implementing an e-government system requires procurement of hardware, software and the services necessary, operation, maintenance and security assurance of e-government systems which stimulate the private sector and, in particular, the IT sector, especially in developing countries where government ICT procurements represent most of the ICT spending. (Kettani & Bernard, 2014, p. 224)

Finally, after the procurement of the technology, the final construction of the system involves:

- **System Installation**

Once the whole equipment has been acquired, it will need to be installed. For larger e-government systems, this will require considerable pre-planning and site preparation.

- **Detailed System Design**

If the software chosen as the basis for the e-government application is an off-the-shelf package, the system development process can proceed fairly directly to implementation (though testing and documentation will be required to some extent). If not, more detailed design work is required as a precursor to system construction or customization. It is at this point that specific design decisions can be made relating to issues including design of:

- data-gathering exercises that will produce the required data for the organization
- general controls to protect data quality
- specific application controls, including validation parameters for each data element
- input forms and screens
- processing techniques required to produce information from data, with an emphasis on simplicity and flexibility

- **System Testing**

If the purpose of system development is to produce a working system, then the system should be tested to see if it works as intended. Most system testing focuses on testing whether the output produced by the system is correct, either in terms of the information it produces or the transactions it supports. Many aspects can be checked such as : hardware functions properly, the transactional component of the system , the management information component of the system, the system interfaces are acceptable to users... etc.

- **system documentation**

Overall Project Documentation: This is a collection of all the project documents used in developing the new e-government system. It can include things like project proposals, analysis and general design information, details of tendering and outsourcing procedures, and minutes of relevant meetings.

System Design Documentation: This records technical information about the design and workings of the new e-government system. It mainly includes quite specific design information, such as the programming languages used to create the system, the structure of any system modules, the design of system interfaces and of data storage, plus a full and annotated list of any programming code used.

System Operation Documentation: This records details about how to use the e-government system. Apart from acting as a corporate memory, this documentation is also used as the basis for training materials and for manuals and online support that help users answer their own operational queries. (Heeks, 2006, p. 247)

2.3 Monitoring and evaluating:

Once a new e-government system has been implemented, an immediate evaluation can be carried out to see whether it is operating, and whether it is operating as intended. Any gap can lead either to a re-evaluation of system objectives or to alterations to the system. Such monitoring and evaluation can continue for some months to investigate how the system is used and for what; when and how much it is used; why it is used; what problems there are with it; and what users' opinions are about it. This may lead to an initial evaluation report, covering:

- The extent to which original objectives have been achieved; details of any amendments to objectives; and any unexpected outcomes.

- Future system changes that would be needed to meet existing and emergent objectives.
- Reflections on the process of e-government introduction, suggesting how the process would be done the same or differently next time round. (Heeks, 2006, p. 256)

The purpose is to provide the basis for measuring the value of e-government projects to the governments as providers of services; and citizens, businesses and non-governmental organizations as receivers of services. Evaluation of e-government projects is also significant to assess the status of development, perform SWOT analysis as a learning basis and improve policy making for future implementation. Furthermore, evaluation provides the basis for more effective policies and strategies by assessing customers' needs and their expectations. Many evaluation methods exist and can be used according to indicators and factors for the project evaluated. (Mkude & Wimmer, 2013, p. 158)

3 E-government requirements and challenges

Because of the importance of realizing e-government projects, we will explain in this section the different types of requirements and the challenges faced.

3.1 technical requirements

Obviously, technology is ubiquitous, and information is constantly being transmitted both indoors and outdoors to facilitate people's convenience and well-being. Technology is penetrating into daily work and habits, in terms of technical resources, IT can support the planning, management and development of e-government systems in many ways:

3.1.1 Hardware Platforms and Cloud Computing for Back-end Systems

- **Processor multi-core technology:** The combination of high silicon integration and demand for parallelism are behind the invention of multi-core CPUs. A multi-core microprocessor implements multiple cores in a single physical package and a single integrated circuit. The processors, however, transparently share the same interconnect as the rest of the system (data and address bus, interrupt lines, etc.). A multi-core CPU is effective when it is solicited to execute more than one thread concurrently, that is, when the application is multi-threaded or composed of multiple cooperating processes.
- **Cloud computing:** Cloud computing is a new technology that helps reduce IT complexity by leveraging the efficient pooling of an on-demand, self-managed virtual infrastructure consumed as a service. Cloud computing provides a more efficient,

flexible and cost-effective model for computing: one that allows IT to operate much more efficiently and respond faster to business opportunities. The goal of cloud computing is to enable IT as a service.

- **Virtualization technology:** Virtualization is a technology that uses a hypervisor (cloud operating system) to create an entirely simulated computer environment, for its guest operating system (OS). Typically, one can create five VMs for each available CPU/core. Access to physical system resources (such as the network access, display, keyboard and disk storage) is multiplexed for the running VMs. A virtual machine can be more easily controlled and its configuration is more flexible than a physical machine. Moreover, a virtual machine can easily be relocated from one physical machine to another as needed. An error inside a virtual machine does not harm the host system, so there is no risk of breaking down the guest OS.
- **Data centers:** A key concern for e-government systems is availability. That is, the ability to provide services even in the most disastrous situations. Ensuring the availability of critical systems, such as e-government systems, is often part of a business continuity plan and/or a disaster recovery plan (DRP). Data centers are often located in carefully selected, locations for physical security and environmental considerations, such as cooling requirements. They are generally equipped with physical access control systems, redundant or backup power facilities, redundant data communications connections, environmental controls and security devices. A key concern when operating a data center is energy consumption. Indeed, the various computing systems, together with the environmental control subsystems (cooling in particular), can account for many of the operating costs.

3.1.2 Software Platforms for E-Government Systems

- **Base software:** Base software refers to the OS and some utility software as general-purpose applications. The OS consists of the programs/software that controls the execution of user programs.
- **Web and application server software:** A web server is a computer program (or a computer running a program) that is responsible for accepting HTTP requests from clients and serving back HTTP responses along with optional data contents, which are usually web pages such as HTML documents and linked objects.

- **Data management software:** A database management system (DBMS), also called a database manager, is a software that lets one or several users and programs write and retrieve data and records in a database. The database is a collection of persistent and organized records
- **Software licenses:** There exist three categories of software license, namely, proprietary, free and open source software licenses. If the former mode of licensing has been around for a considerable length of time, and its financial and legal implications are understood, the differences between the latter two have a significant legal and financial effect on the entity using the software. A free open source license makes software free for the inspection of its code, modification and distribution.

3.1.3 Networking and Interconnection

A computer network is the set of physical media (i.e., optical fiber cables, radio frequencies, coax cable, copper twisted pair cables, etc.), together with the active devices (switches and routers) and associated protocols and services (DHCP service, naming service etc.) that allow for the transfer of information and invocation of e-services in the form of messages between the user equipment (PC, mobile device, etc.) and the e-government system platform.

3.1.4 Security management

Generally, security management consists of a set of processes and techniques used to establish, maintain and evaluate security programs at all levels to ensure the confidentiality, integrity and availability of all e-government computing assets. Managing security programs is an increasingly difficult and challenging task. With the advances in computing and communications technology, it is mandatory to monitor security on a number of levels. (Kettani & Bernard, 2014, p. 241-247)

3.2 Resources

The rapid development in new technologies and the expedition of technological innovations force countries that have adopted e-government projects to replace their legacy systems and update them constantly. Hardware component includes networks, servers, laptops, and personal computer. Software component includes programs, applications, information systems, and databases. The ICT infrastructure includes all reusable and sharable resources which are considered as a foundation for all applications. Such infrastructure enables governments and agencies to share and provide services and information, play vital role in saving employee effort, and facilitate cooperation, collaboration, sharing and interacting

between government agencies. Governments can use social media and web 2.0 tools for reaching out to citizens, recruiting and staffing, enhancing community participation, improving information sharing, and achieving transparency.

Emerging with E-Government, digitalization of public organization has happened, such as MIS and Web system, Digital Office and E-paper, Knowledge management and sharing system, Structural and Process Change, E-Citizens and E-Learning. E-government initiatives includes dozens of digital applications that can be implemented across a broad range of functional government areas – from public health and safety departments to motor vehicle and criminal justice agencies. (Zhiyuan Fang, 2002, p. 16)

ICTs can play a crucial role in promoting the inclusion of persons with disabilities, through e-learning, telecommuting, accessible e-governance online services, among others. But major obstacles remain. Most ICTs are still inaccessible for persons with disabilities and many ICTs remain unaffordable. Persons with disabilities tend to have lower access to education which in turn prevents them from accessing information and from fully benefiting from the benefits of ICT due to lack of ICT skills. As a result, the digital divide between persons with and without disabilities persists. (UNDESA, 2018, p. 6)

Closing the digital divide can provide better opportunities for both people and companies, thereby contributing to the stimulation of the knowledge economy. Moreover, better inclusion rates can enhance the learning processes and popularise lifelong-learning programs supported by internet platforms. Public administration can benefit from higher inclusion rates as a way of reducing the cost of delivering public services. The savings would come from progressively replacing traditional services with their electronic equivalents, making interactions with citizens easier, more customisable and more efficient for governments. Better digital inclusion can become an element of social cohesion, not only by enabling eParticipation but also by exploiting the potential for improving communication granted by the internet for community-building projects oriented to integrating marginalised groups into society. (Archmann & Iglesias, 2010, p. 32)

Security and privacy of information is really important to guarantee people safety, governments should guarantee protecting all citizens' daily operational transactions and their personal information, which should be stored in a special database, it is a fact that greater use of e-government and ICT in public administration also results in the appearance of new risks and challenges. Greater openness involves a greater chance of misuse.

Therefore, issues related to ICT security and the development of secure standards are gaining importance in the implementation of e-government solutions as well as in regional, national e-government strategies.

In addition to the whole ICT needs, there comes providing financial support, in general terms, in order to support the achievement of the strategic objectives set by the overall digital government policy/strategy, it is an efficient practice to envisage the co-ordination between the body in charge of setting the digital government agenda and of overseeing its implementation across the public sector, and the Ministry of Finance, which assigns the yearly ICT budget to the different entities.

This means that the discussion goes beyond the simple choice of a “single centralised budget for ICTs” vs “decentralised budgets assigned to the individual policy areas”. Often a mix of funding sources and models coexist, which may include a budget assigned to the co-ordinating agency/body, a specific fund for digital government/ICT projects managed by such an agency for the financing of specific initiatives in substantive policy areas that also have their own budget for ICTs. Countries like Portugal and Uruguay, for example, have established centralised funds for ICT. This ICT funds option can be an alternative source of funding to finance specific digital government projects, or can complement the national yearly budget for ICT. In this second instance, the funds become a way to prioritise specific investments and initiatives towards the achievement of objectives foreseen by the strategy (e.g. fostering digital innovation, interoperability, uptake of common elements/systems, data-driven approaches, open data), which often cut across the administration and are aimed to spur a real digital transformation in line with the idea of digital government as opposed to e-government. A combination of financing mechanisms including, for example, an ICT dedicated fund combined with the generic budget for ICT would not prejudice the existence and use of resources by individual institutions to develop their own ICT earmarked projects in line with sector policies, but would still leave room for more strategic crosscutting initiatives to grow. (OECD, 2016, p. 24-25)

Financial support is difficult because of the formal procedures followed by public sector for budgeting and allocating resources, many developing countries depend on loans and financial aid from donors to create their e-government projects. Such source of funding is not sufficient to support all requirements of the project, the financial investment in infrastructure raises the issue of its return and benefit to ensure its sustainability

Sustainability is an important factor that improves the credibility of e-government and reduces the risk of being short-term.

Human factors are mainly represented by citizens & public personnel. E-government projects strive to improve the relationship between governments and their citizens and reshape this relationship to depend on more cooperation and interaction between the government, citizens, businesses and public sector constituent. Governments need to create an atmosphere of interaction between all the parties and the exchange of information through a comprehensive network and interactive community, Government projects depend on citizens' willingness to use the system. Governments should raise awareness of the benefits of e-government projects through educating people about the benefits and objectives of such project; citizens who realize the benefits of e-government initiatives will be more likely to accept the initiative and use it.

E-government projects require a strong leadership, and effective project champion. Successful leaders are known for their clear vision, adoption of innovation, and strong motivation and empowerment. A process of upward participation guarantees the public buy-in, and requires a strong leader to understand and follow citizens' needs. Successful leadership controls both internal and external communication through multiple channels and utilizes the feedback collected from citizens and businesses to improve their performance. Successful leadership is characterized with flexible management that encourages cooperation between departments and central management. (Abu-Shanab & Bataineh, 2014, p. 210-213)

3.3 success conditions

1- The Broader Context of Telecom and other ICT Policy

When everyone (citizens, companies, government employees, suppliers, etc.) can use affordable ICT, e-government will eventually be able to realize its full potential. Therefore, to some extent, the success of e-government depends on the adoption of a broader ICT policy and regulatory framework, which can promote the development and penetration of communication services. In the past two decades, legally establishing a highly competitive ICT market has been a key factor in expanding communications infrastructure in many countries/regions. The reforms include, among other policies:

- the introduction and enforcement of competition and interconnection rules;
- universal access policies;

- the establishment of strong, independent regulatory agencies;
- the elimination or simplification of individual licensing requirements; and
- the reform of spectrum management to promote wireless Internet access.

2- Laws and Policies enabling e-government Services

Providing e-government services online may raise important legal issues regarding the validity of electronic and paper documents. With regard to the identification and certification of individuals and companies who wish to conduct transactions electronically, privacy, security, access to government information, data protection and freedom of information, separate and complex issues have also arisen. The key principles to guide policy-makers include:

- ensuring functional equivalence under the law with pre-existing forms of communication and authentication;
- technology neutrality;
- protection of identity;
- capacity to conduct business and rights of access to information in a digital economy.

Many examples of e-government services can be given such as: electronic documents, electronic signature, electronic authentication, digital/electronic ID ...etc.

3- Laws on Access to Government Information

While implementing e-government programs, some countries have passed legislation that stipulates the right of public citizens to access government records. These laws are sometimes called the Freedom of Information Act (FOIA) and are largely similar. They provide general rights to access official documents and other information held by government agencies, but certain sensitive information is exempt.

4- Laws and Policies on Privacy and Data Protection

Privacy and security are often cited as major concerns of Internet users. Individuals and businesses will assess the trade-off between convenience and confidence in the way that personal data collected through e-government services is managed and protected from misuse and abuse. Privacy is internationally recognized as a human right in Article 12 of the 1948 Universal Declaration of Human Rights and in Article 17 of the International Covenant on Civil and Political Rights (ICCPR). On the regional level, treaties that make privacy a legally enforceable right include the European Convention for the Protection of Human

Rights and Fundamental Freedoms and the American Convention on Human Rights. In the context of e-government, “privacy” specifically refers to principles for the fair use of information. The concept of fair information practices holds that the citizen retains an interest in the information collected by the government in the course of a required or voluntary interaction. The citizen’s rights include a right to insist that the information be used only for the purposes for which it was collected, that it be retained no longer than necessary, that it not be redisclosed, and that it be kept in accurate form. Taken together, these rules for the fair use of information are known as “fair information practices.” They are globally recognized by international and regional bodies and are enshrined in key human rights instruments. Both instruments articulate a similar set of guidelines regarding the responsible handling of personal data. These guidelines form the foundation of many national privacy laws and regional data protection frameworks, including the EU Data Protection Initiative and the APEC Privacy Framework. A growing number of countries have adopted national data protection laws. Such laws may apply to data about individuals collected by the government, to personal data in the hands of private sector businesses, or to both. While details vary, there is a deep worldwide trend toward establishment of legal protections for personal data in both commercial and governmental systems.

5- Information Security

As governments become more dependent on computers, both internally and in their relations with citizens, they become increasingly vulnerable to a range of risks, from interruption of operations to loss of confidential data. Government agencies at all levels (national, provincial, and local) must protect the computer and communication systems that they own and operate. Information security requires a combination of business, management, and technical measures in an ongoing process. Security is costly, but loss of data, and associated loss of trust or government reputation, can be a more significant risk. Like privacy, it should be addressed at national policy, architecture, operational, and infrastructure levels, as well as at the individual project design phase and periodic review. Information security is achieved by implementing a suitable set of controls, including policies, processes, procedures, organizational structures and software, and hardware functions. These controls need to be established, implemented, monitored, reviewed, and improved, where necessary, to ensure that the specific security and business objectives of government and its agencies are met and continue to keep pace with demand and technological change.

6- Data, Records, and Content Management

The ability to reliably access, store, interpret, and reuse data and information is fundamental to the daily operations of government. Its importance and complexity will grow as the type of information being created and repurposed goes beyond the basic data and records in paper and electronic files, to more sophisticated content including e-mails, images, geospatial coordinates, videos, and other multimedia sources. E-government automates and expands the demand for and value of these critical assets through e-administration, e-commerce, e-procurement, the delivery of services to the public through e-services, and new forms of interaction in policy development and service design. The associated architecture and management systems for their capture, classification, storage, preservation, and sharing is a critical infrastructure for effective and efficient government.

From an e-government perspective, a sound records management system serves two key purposes:

- promoting efficiency, by ensuring that the information necessary for reliable decision-making is readily available; and
- providing a basis for accountability in all its forms.

7- Interoperability

Interoperability is one of the core ingredients for effective e-government. It refers to the ability to communicate, share information, and, ultimately, integrate business operations across multiple organizations that share stakeholders, have different internal processes and technologies, and retain control of data and finances. It facilitates the use of data across horizontal organizational boundaries, such as sharing within a ministry or department , as well across vertical boundaries, such as between federal and provincial governments.

The European Union has identified three elements of interoperability:

- Organizational: focused on the workflows and other organizational processes involved in delivering e-government services. May involve creating agreements on how organizations will interact with each other.
- Semantic: using meta-data terms and taxonomies to identify information and make it easier to access.
- Technical: ensuring interoperability among different IT systems and applications through commonly accepted standards. (*infoDev*, 2009, p. 43-54)

3.4 challenges of e-government projects

Series of challenges and obstacles have emerged in the way of fully implementing e-government projects in public administration. We can sum up these challenges into 4 categories (technical, economic, social and organizational).

3.4.1 Technical challenges:

- **Interoperability:** Public administration is no stranger to technology, there are a lot of legacy systems in use in almost every country. The problem with these legacy systems is that they cannot connect and exchange information between them. Rather than adding new systems on top of outmoded ones, e-government planners should develop an integrated approach, creating new systems in all departments that can work together. As a consequence, it is mandatory to define “open standard” architectures, having well defined interfaces, to avoid heavy maintenance interventions on existing applications, perhaps completed in the recent past.
- **Privacy:** A critical obstacle in implementing e-government is the citizens’ concern on privacy of their life and confidentiality of the personal data they are providing as part of obtaining government services. The guarantee by government will not suffice unless accompanied by technical solutions, transparency of procedures and possibly independent auditing. Privacy and confidentiality have to be highly valued in establishing and maintaining web sites.
- **Security:** A basic task to fulfil is payment (of fines, taxes, etc.). Transaction security is an obvious requirement.
- **Multimodal interaction:** An e-government application is really effective if user can access it using different devices.

3.4.2 Economic challenges

- **Costs:** governments should seek to invest in sustainable programs that can produce savings. Implementation, operational and evolutionary maintenance costs must be low enough to guarantee a good cost/benefit ratio.
- **Maintainability:** Regulations and device characteristics can vary, and the system must be capable to second the emerging needs. Maintainability is a key success factor for long living systems in a rapidly changing technical e regulatory environment.

- **Reusability:** E-government must be seen as a nationwide plan. Implemented applications, or at least some of their modules, must be reusable by other administrations.
- **Portability:** Independence from hardware/software platforms is a primary requisite for portable applications, to help in possible reuse by other administrations.

3.4.3 Social challenges:

- **Accessibility:** Any service should be accessible by anybody from anywhere anytime. The concept of e-government is claiming for increased efficiency and effectiveness of government, but these goals will be achieved only if service will be available to one hundred percent of citizens. Even if Internet population is exponentially growing, there is a significant portion of the people who may not be able to access e-government for various reasons. Some users may have physical or cognitive limitations, both permanent as well as temporary. Some others can have limited access to ICT technologies and devices.
- **Usability:** Users are often non expert users, or, at least, they may use applications in a sporadic way, and need guidance to find the right way to perform their transactions. Governmental web sites must be usable, to be effective
- **Acceptance:** Successful implementation of e-government requires a reconceptualization of government. As e-government becomes a reality, the public sector organizational structure will change accordingly both internally and externally. The focus of change will be on the system efficiency and the citizens. Internally, the power conflicts over departmental boundaries and control of services will become more apparent as integration progresses. Externally, government processes will be organized for citizens' convenience instead of the convenience of the government. In other words, the integration should not be driven by efficiency and effectiveness alone. A relevant issue will be to have all the citizens well aware of the facilities offered by the e-government infrastructure, and have them to trust in it. This task may require appropriate marketing actions and education of less skilled people. (Signore & Al, 2005, p. 6-7)

3.4.4 Organizational challenges:

- **Top management support:** The implementation of e-government needs the support from the leaders and top management of government for successful implementation. Top management support refers to the promise from leaders to accept, support and adopt the e-government systems and applications. Therefore, it plays a significant role in the adoption and implementation of e-government.
- **Resistance to change to electronic ways:** E-government is a new phenomenon which in the work place means the transformation from manual methods of work to electronic ones. These new changes will create a new advanced environment completely different to what has been used for many years in government departments. To decrease the resistance to e-government systems employees have to understand the importance and significant of e-government and make sure that they won't endanger their jobs, but through retraining and skill developments, the employees can be reassigned new roles. Moreover, it is important that e-government leaders identify the sources of resistance and create a plan for treat them.
- **Collaboration:** Collaboration and cooperation between all partners is a critical factor in the e-government implementation process in order to gain a successful e-government system. Government should encourage all sectors to participate in e-government and implementation and development.
- **Lack of qualified personnel and training:** The lack of ICT skills is a major challenge to an e-government implementation, especially in developing countries. The e-government system can be implemented successfully if qualified personnel are available to take the role of start and develop the e-government system. In general, it is vital to focus on training and education programs for enhancement the progress of e-government projects. The full economic benefits of ICT depend on a process of training and learning skills, which is still at an important stage for all governments. (Alshehri & Drew, 2010, p. 84)

**CHAPTER II:
METHODOLOGY OF RESEARCH**

1 – Epistemology

All research is based on a certain vision, uses a methodology, and proposes results to predict, prescribe, understand or explain. In 1967, Piaget presents a statement of vital importance for understanding the evolution of scientific practice in the 20th century: epistemological questioning has become inseparable from the practice of scientific research in the field of mathematics, physics, biology and various established social sciences. As in any other science, the requirement of epistemological positioning seems unavoidable in most disciplines of management science. (Gavard-Perret, Goutteland, Haon, & Jolibert, 2012, p. 13).

Therefore, to achieve our research goals we'll adopt the constructivism paradigm, it induces an inductive reasoning which consists in discovering regularities from the observation of the object of study, i.e. based on the observation of singular cases to justify a general case.

2 – Method

Research methods are the strategies, processes or techniques utilized in the collection of data or evidence for analysis in order to uncover new information or create better understanding of a topic. (University of Newcastle, 2020) Therefore, we chose a qualitative method to conduct our research, also named “qualitative research”. We aimed to choose the adaptation of a qualitative research because our theme is very wide and the subject of our research is complex itself, this method helps us to understand more about the subject and to explore it in depth and interpret results.

That requires a passage through an analysis of the current situation of Algerian e-government strategy, and present different online services then evaluate governmental online portals, where our research must necessarily be based on data collection methods.

3 - Population and sampling

Due to the "covid-19" pandemic situation, it was out of question to keep on the internship, so we choose to evaluate governmental online portal depending on 25 criteria chosen from the literature review specifically to give a fairly comprehensive assessment then determine at what stage of e-government maturity are the portals .

This case study was basically based on the following portals:

- Ministry of Justice (<https://www.mjustice.dz/fr/>)
- Ministry of Interior, Local Communities and Regional Planning (<https://interieur.gov.dz/index.php/fr/>)
- Ministry of Commerce (<https://www.commerce.gov.dz/>)
- CNAS (<https://cnas.dz/fr/>)
- Wilaya of Algiers (<http://www.wilaya-alger.dz/en/>)

As we should mention, Google was used to identify the URL of each website and each website was evaluated separately according to the 25 criteria. The interface of the previous online portals is shown in appendices.

4 - Data collection tools

The data collection process involves the systematic collection of the desired information through the instruments chosen for this purpose. (N'da, 2015, p.158) So our depended on the following data collection tools.

4.1- Observation:

Observation can add new dimensions to understand the practical uses of new technologies and any problems encountered. In addition, observational evidence can often be used to provide additional information about the subject under study. (Yin, 2018, p.166) So we used observational evidence when surfing through all e-portals and testing their performance.

4.2- document analysis:

"Because of its overall value, documentation can play a prominent role in any data collection in doing case study research. Systematic searches for relevant documents are important in any data collection plan". (Yin, 2018, p.158) The documentary analysis allows the researcher to have what he needs to explain or understand a phenomenon, the documentary research makes available the general information concerning a subject and a field under study. (N'da, 2015, p.129) Therefore we adopted in this study on several articles and papers published about e-government strategy, online portals assessment, international reviews, formal case studies on Algerian e-government development, and administrative documents.

5 - Data analysis

Based on the literature review, we choose to elaborate a comprehensive assessment model for e-government portals and we tried to include as much criteria as we can (according to the availability of information and the possibility for evaluation), the assessment was based on previous studies and some of ISO/IEC 25010 Software Product Quality Model that our research could answer , in addition to that we used a Likert scale for the evaluation that is based on 5 levels that are : very poor – poor – fair – good – excellent. Then we did our analysis according to each institution through their official website.

CHAPTER III: RESULTS AND DISCUSSION

1 Algeria engagement in e-government:

1.1 The first intentions of 2000s:

Since the beginning of the new millennium, there has been a strong movement in Algeria to reform and modernize public administration by trying to introduce new technologies into the management and delivery of public services. Large-scale actions have been announced with the aim of establishing the technological infrastructure enabling the transition to the information society and the establishment of e-government. These actions included in particular:

- 1- The definition of a national vision for Algeria's accession to the Information Society and a multi annual plan for the generalisation of the use of new information and communication technologies, adopted by the government in 2002.
- 2- The rapid development of computer, office, telephone, telematics and Internet tools.
- 3- The strengthening of the institutional framework for public ICT policy, through the creation of a specific ministry and the total liberalization of the telecommunication sector.
- 4- The spontaneous increase of institutional websites.

Although some ministries have undertaken several initiatives, nevertheless, the implementation of these actions was blocked by a multitude of obstacles, including the real desire for change and the appropriation of the principles of new public management such as contractualisation and the involvement of the private sector, governance etc. (Mezhouda, 2018, p.10)

1.2 e-Algeria project

The world's most powerful nations have seen their growth boosted due to the priority given to knowledge and ICT, the main source of wealth creation and competitiveness gains.

Algerian government itself adopted a national project of reform and modernization of different public sectors; a project named "e-Algeria 2013".

Therefore, the e-Algeria 2013 strategy is part of this vision of the emergence of the Algerian knowledge and knowledge society, taking into consideration the profound and rapid changes that the world is experiencing. This strategy, which calls for a coherent and vigorous action plan, aims to strengthen the performance of the national economy, businesses, and the administration.

It also aims to improve the capacity for education, research and innovation, to develop industrial ICT, to increase the attractiveness of the country, and to improve the lives of citizens by encouraging the spread and use of ICT.

E-Algeria 2013 strategy was based on 13 guidelines which are:

- Accelerating the use of ICT in public administration
- Accelerating the use of ICT in companies
- Development of mechanisms and incentives for citizens to access IT equipment and networks
- boosting the development of the digital economy
- Reinforcement of the telecommunications infrastructure at high and very high speed
- Human skills development
- Strengthening development research and innovation
- Updating the national legal framework
- Information and communication
- Upgrading the national legal framework
- Evaluation and monitoring mechanisms
- organizational measures
- Financial resources and planning

Each of these guidelines was conducted by a main objective and a series of actions to move forward with the whole strategy. Not to forget to mention that objectives and actions to be taken, were drawn up in consultation with all the institutions and ministerial departments, as well as with public and private operators working in the field of information and communication.

The e-Algeria 2013 project document indicated a set of these objectives:

- Modernizing administration through the introduction of ICT
- Get the administration and the citizen closer together through the development of online services.
- Strengthening the economic sector through ICT integration.
- Spread of internet access.
- Creating the right conditions for the intensive development of the ICT industry.
- Construction of an infrastructure

- Realization of High-speed and ultra-high-speed telecommunications infrastructure, secure and high-quality service.
- Implementation of a priority program on higher education and vocational training in the ICT fields.
- Development of value-added products and services in the field of ICT, through the intensification of research, development and innovation activity.
- Establishment of an environment of trust conducive to e-governance.
- Awareness of the importance of the role of ICTs in improving the quality of citizens lives and the socio-economic development of the country.
- Appropriation of technologies and know-how through participation in international dialogue and initiatives.
- Set of a system of monitoring and evaluation indicators.
- Establishment of a coherent institutional organization at three levels: guidance, intra-sectoral coordination and implementing.
- Identify resources and funding mechanisms, estimation and evaluation process.
(e-commission, 2008)

1.3 Digitalization efforts in different sectors

1.3.1 Ministry of Justice:

Presentation of the Ministry:

The Ministry of Justice is one of the sovereign ministries in Algeria. It was created at the beginning of the Algerian state's existence in 1962 to be the executive organ of the judiciary. Its main role is to consolidate the rule of law and institutions, to establish justice and equality, to strengthen the principles of equal opportunities, transparency and protect rights and freedoms, but it also ensures to the organization and development of judicial institutions as well as of subsidiary bodies, to provide all technical, financial and administrative services and equipment to all judicial bodies, to monitor the progress of their work so as to ensure the security of the law enforcement and equality between citizens. The department also carries out its activities and establishes the plans and programs necessary to carry out the tasks assigned to it under the government's Constitution, laws and economic and social development plans.

The Ministry of Justice enforces the law to protect every citizen and to guarantee the rights and freedoms of individuals.

To carry out these tasks effectively, in accordance with constitutional and legal provisions, its work must focus on the principles of legality, equality and impartiality and that these be respected by the judiciary.

Despite the measures taken by the Ministry of Justice to protect individual and collective freedoms, fight against crime in all its forms including transnational organized crime, define the rules and principles of a fair trial in accordance with international standards, protect the rights of the defense and through the exercise of an active role in the field of human rights, update the revision of legislation, to contribute to the spread of a legal conscience and culture and to strengthen the independence of the Justice, the latter is still seeking other solutions for a serious, diligent and responsible work on the path of justice reform.

The launch of the justice reform process dates back to October 1999, when the President of the Republic installed the National Commission for Justice Reform, whose mission was to make an accurate diagnosis of the situation and propose appropriate measures and actions to establish the rules of a solid and effective judicial system, capable of responding to the aspirations of the citizen and contributing to the establishment of a State of law, the objective being to reconcile the citizen with the institutions of his country in particular the restoration of his confidence in justice. Urgent measures have been proposed either to meet the essential needs of society, or because of its specificity, and in this sense, they have facilitated the implementation of major projects included in the framework of the reform and thus human resources have been prepared to ensure the transformations required by the reform.

Ministry of justice online services:

- Accord electronic signature and certification technology in the judicial field, (according to Law No. 15-03 of February 1st, 2015 on the modernization of justice).
- Extract the criminal record (Bulletin no. 3) and nationality certificate (electronically signed).
- Withdraw ordinary copies of judgments signed electronically (for lawyers).
- Extract ordinary copies of the decisions rendered by the Supreme Court and the Council of State, signed electronically, from the Courts.
- Request for correction of errors in civil records.
- Digitizing the judicial record in all its stages, including the electronic exchange of queries outside the hearings.
- Track the court case and trial process via the online portal of the Ministry of justice.

- E-mail addresses for citizens requesting judicial services and availability of the electronic certification service of electronically signed documents, withdrawn via internet.
- Granting various departments and public institutions the opportunity to consult (Bulletin No. 2) of the criminal record and to withdraw it, electronically signed.
- Implementation of an online learning platform.

1.3.2 Ministry of Interior, Local Authorities and Territorial Planning:

Presentation of the Ministry:

The Ministry of Interior, Local Authorities and Territorial Planning, created in 1958, is the ministerial department of the Algerian government, traditionally responsible for internal security, territorial administration, and civil liberties, Ministry of Interior and Local Authorities is at the heart of government activity as illustrated by the participation in 135 Interdepartmental Councils in 2007 and 2008 and 18 EPC, and it contributes to the implementation of the major sectoral actions developed by the other ministerial departments.

The assignment of the Minister of Interior and Local Authorities defined by Executive Decree No.94-247 of August 10, 1994 and subsequent texts are exercised in the following areas:

- Public order and safety,
- Civil liberties,
- The condition and movement of persons and goods,
- Associative life,
- The elections,
- Public events and meetings,
- National interest operations and in particular those of an emergency nature,
- Regulated activities,
- Decentralized activities and monitoring of local acts,
- Local development,
- The territorial organization,
- Local finance,
- Cooperation between local authorities,
- Civil protection,
- National transmissions.

Ministry of Interior online services:

The Ministry of Interior and Local Authorities has launched a large modernization project aiming to build an efficient and transparent electronic administration.

Digitizing all the registries of civil status and implementing the automated national registry of the civil status, that includes:

- The citizen obtains his documents of civil status instantly from any town or administrative branch of the national territory. He no longer needs to travel to the place of birth, marriage or death to obtain these documents.
- The Algerian citizen residing abroad, applies for a 12-S (special birth certificate) directly via the website "<http://demande12s.interieur.gov.dz>" and withdraws it from the diplomatic or consular representation where it is registered.
- Electronic national register of registration certificate enabling citizens to obtain this document on-site.
- Apply for biometric passport and take an appointment online
- Apply for national ID (only for biometric passport holders)
- File an online request or claim or suggestion about ministry's services.

1.3.3 Ministry of Commerce:

Presentation of Ministry of Commerce:

The Ministry of Commerce is the government institution that oversees several of the central and decentralized agencies, institutions and organizations within its department. Thus, all economic transactions and measures relating to internal and external trade, these allocations differ according to these services.

The current ministry is established by virtue of Executive Decree No. 94-207 of 7 Safar 1415 corresponding to 16 July 1994, after having been under the supervision of the Ministry of Economy before it was amended by Executive Decree No. 90-189 of the first Dhi El Hijah 1410 corresponding to 23 June 1990, the Ministry of Commerce works on the conduct of its affairs and interests in accordance with its provisions. Since 1963 has begun the changes that are shown here off summarize in a historical series that shows that the transformations that have taken place from independence to the present day that will be presented in this table:

Table 2: History of the Ministry of Commerce

From 1963 to 1965	the Ministry of Commerce is under the Ministry of Economy and the name of the Ministry of Commerce includes: The Ministry of Finance, Ministry of Commerce, Ministry of Industry.
From 1965 to 1990	The Ministry of Economy is transformed into the Ministry of Commerce
From 1990 to 1994	The Ministry of Commerce returned to the first appointment Ministry of Economy, the latter containing two ministerial bodies (Minister Delegate in Charge of Trade, in addition to the Minister Delegate in Charge of Treasury).
From 1994 to 2000	The Ministry of Economy has turned to the Ministry of Commerce again
From 2000 to 2019	The Ministry remained the appointment of the Ministry of Commerce
January 2020	The creation of a Ministry Delegate in charge of Foreign Trade, a body which is currently under the supervision of the Ministry of Commerce.

Source: elaborated by our cares

Within the framework of the general policy of the Government, the Minister of Commerce proposes, within the limits of his powers, the elements of the national Commerce policy and ensures the implementation in accordance with the laws and regulations in force. It reports on its activities to the Head of Government, the Council of Government and the Council of Ministers according to the forms, modalities and deadlines established.

The Ministry of Commerce is responsible for:

- develop and/or participate in the establishment of the institutional and regulatory framework for Commerce;
- Develop and propose any strategy to promote non-hydrocarbon exports;
- ensure the development and implementation of a system of statistical information on international trade.

The Ministry of Commerce is responsible for regulating and promoting competition by:

- to propose any measure likely to strengthen the rules and conditions for exercising sound and fair competition in the markets for goods and services;

- to propose and ensure the implementation, together with the institutions concerned, of all provisions relating to the conditions and arrangements for establishing, locating and carrying out commercial activities and regulated professions.

As regards the quality of goods and services and consumer protection, the Ministry of Commerce is responsible for:

- to determine, in consultation with the ministerial departments and bodies concerned, the conditions for the consumption of goods and services in terms of quality, hygiene and safety;
- encourage the development of analytical laboratories and propose official analytical procedures and methods in the field of quality.

In the area of economic control and fraud control, the Ministry of Commerce:

- organizes, guides and implements the control and control of illicit business practices, anti-competitive practices, quality and counterfeit fraud;
- carry out any in-depth economic investigation and, where appropriate, refer the matter to the judicial authorities.

The Ministry of Commerce is responsible for economic and trade studies and information:

- carry out prospective studies on international economic development and trade;
- ensure the establishment of data banks on internal trade and international trade;
- contribute to the organization and development of a national economic information system.

Ministry of Commerce online services:

After going through the online portal of Ministry of Commerce and consulting its content we saw that it has only 3 online services: online request (listening cell)/ search for a company/ set an appointment at CNRC and 1 online service that requires registration: space of exchange

- Space of exchange: interactive space to inform and collect opinions and induce for contribution from staff, citizens, operators and professional associations. But at this moment this service isn't available for citizens, it's only dedicated to central administration and organizations under the ministry.
- online request (listening cell): The department provides a form to collect different concerns, requests of citizens.

For the other 2 online services, the ministry's website redirects the user to CNRC online portal (<https://sidjilcom.cnrc.dz/web/cnrc/accueil>), both of these online services require a subscription user's account .

- Search for a company: locate a merchant or a company.
- Set an appointment at CNRC: make an appointment for all transactions and operations related to trade register.

1.3.4 National Social Insurance Fund:

Presentation:

The national social insurance fund for salaried workers CNAS is a public institution with specific management, it is endowed with legal personality and financial autonomy and deemed a trader in its relations with third parties. The CNAS is administered by a board of directors, it is under the tutelage of the Minister of Labour, Employment and Social Security, its headquarters are in Algiers (BEN AKNOUN), it has central and local services.

As part of the strategy of modernization undertaken by the social security sector and the continuous improvement of the public service, notably by facilitating procedures for reporting social security contributions for the benefit of salaried workers. CNAS itself has launched new web-based technology devices to provide the best possible service for users.

Online services:

The official CNAS portal: www.cnas.dz is an information space that provides insight into all aspects of the CNAS' activity, providing all users with reliable and regularly updated information. The CNAS portal has 3 internal portals for various services, the 1st one is teledeclaration.cnas.dz

Tele-Declaration is a new nationally launched scheme allowing employers to file their declaration of contribution and employees via the Internet, this system was available for employers since April 15, 2014.

The Tele-Declaration portal is a web portal hosted in the CNAS intranet accessible via the website www.cnas.dz, it is intended for employers to enable them to perform online:

- Contribution base return (D.A.C);
- Declaration of Employee Movements (D.M.S);
- Consultation and editing of statements made;

- Consultation and downloading of the list of employees;
- Filing of the Annual Statement of Employees (D.A.S);
- Edition of the deposit slips of (D.A.S).
- Paying contribution via e-payment.

The 2nd one is elhanaa.cnas.dz, Espace El HANAA is a service intended for social insured employees to allow them to follow the refunds of benefits in cash paid by CNAS. This service is offered in two forms, the first is a web portal accessible via a URL (elhanaa.cnas.dz), the second is an application for Android smartphones. The online portal allows users to:

- View pharmaceutical purchases for the last 04 months: payment date, amount, medicines, quantity, price.
- Consult personal information: rate of payment, date of end of entitlement, paying center, etc.).
- Consult the information of the rights holders.
- Check the daily allowances (sick leave) of the last 04 months from the date of validation of file. (Date of start and end of the sick leave, date of validation of file, amount refunded).
- Consult the list of doctors with wilaya and specialty agreements. (Name, first name, address, specialty, telephone number).
- Locate the paying center and get its information (Telephone and address).

The 3rd one is pnc.cnas.dz/_pp/ is CNAS intranet

1.3.5 Wilaya of Algiers:

Presentation of the wilaya:

Algiers is the capital of Algeria; it is located in north Algeria with a population of 3,154,792 limited in an area of: 808.89 (km²) with a total of 13 administrative districts and 57 communes. The Foundation of the city of Algiers in 1200 BC is attributed to the Phoenicians. By its opening on the Mediterranean, it was the crossroad of several civilizations traces of which are here and there on its territory. The history of the region is rich in events which have occurred and which have contributed to its prosperity. Currently, Algiers is the political and economic capital of the country, it is the seat of all central Governments, political and social institutions, the economic and financial institutions, major centers of decision and

diplomatic representations. Thus, because of its status as the capital of the country, its strategic geographical position around the Mediterranean basin, the richness of its historical and cultural heritage, the diversity of its physical and natural environments, the size of its infrastructure network and the importance of its program in progress, Algiers is the first city in Algeria. It represents a territory of excellence for living and working, but above all for investing and succeeding.

Wilaya of Algiers online services:

On the citizen space section, we find 3 online services:

- The special birth certificate 12s
- Tracking passport application status
- Criminal Record (Bulletin N° 3)

These 3 online services were previously mentioned, two under the Ministry of Interior, Local Authorities and Territorial Planning and one under the Ministry of Justice. Indeed, after clicking to access the online services, the portal redirects the user to portals of ministries previously mentioned.

1.4 International rankings

United Nations Department of Economic and Social Affairs (UN DESA), since 2001, has published the United Nations E-Government Survey. In the past ten editions, it has become a leading benchmark reference for e-government and a policy tool for decision makers. The survey is the only global report that assesses the development of e-government in all UN member states. The evaluation measures the e-government performance of a country relative to another country, not an absolute measure. It recognizes that each country should determine the level and extent of its e-government initiatives based on its own national development priorities and achieving sustainable development goals.

The survey is a benchmark and development tool for countries to learn from each other, determine the advantages and challenges of e-government and formulate their policies and strategies in this field. It also aims to promote and facilitate discussions on the key role of e-government and ICT in sustainable development among intergovernmental institutions including the United Nations General Assembly, the Economic and Social Council and high-level political forums. The survey is mainly targeted to decision makers, government officials, academia, civil society, the private sector, and other practitioners and experts in the

fields of sustainable development, public administration, digital government and ICT for development. (UN,2020, p. 20)

1.4.1 E-Government UN Development Index:

The E-Government Development Index presents the state of E-Government Development of the United Nations Member States. Along with an assessment of the website development patterns in a country, the E-Government Development index incorporates the access characteristics, such as the infrastructure and educational levels, to reflect how a country is using information technologies to promote access and inclusion of its people. (UNeGovKB)

The EGDI score rates a country as:

- Very High-EGDI (Greater than 0.75)
- High-EGDI (Between 0.50 and 0.75)
- Middle-EGDI (Between 0.25 and 0.50)
- Low-EGDI (Less than 0.25)

And based on the following dimensions:

- Online Service Index (OSI)
- Telecommunication Infrastructure Index (TII)
- Human Capital Index (HCI)

1.4.2 E-government in Algeria through UN indicators:

Based on both surveys (UN,2018) and (UN,2020), we see that Algeria has progressed in the EGDI ranking by 10 positions in 2020, becoming ranked 120 out of 193 countries that the UN survey includes, with a score of (0.5173), so it joined the High-EGDI group after being Middle-EGDI in 2018, and from 12th position to 13th in Africa. We see that OSI and HCI raised slightly while TII raised remarkably and we see that telecommunication infrastructure and human capital development is also more advanced than online services provision.

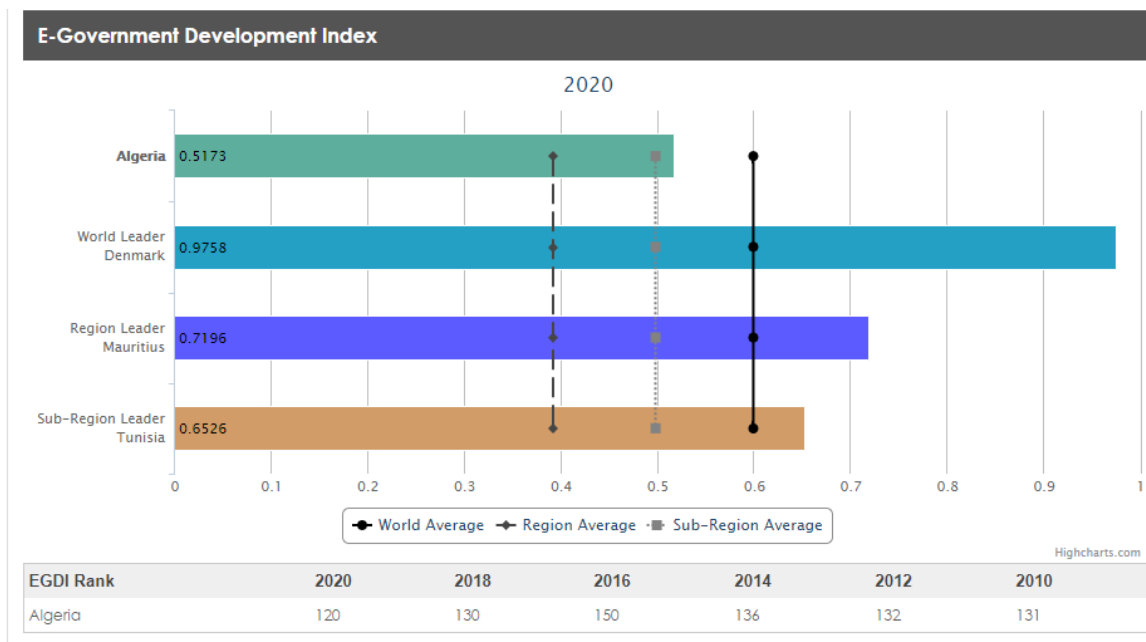
Table 3: Algeria ranking

	2018	2020
Rank	130	120
EGDI	0.4227	0.5173
OSI	0.2153	0.2765
TII	0.3889	0.5787
HCI	0.6640	0.6966

Source: elaborated by our cares

Since the evaluation is country relative to another, the next figure 3 shows that Algeria's EGDI score is lower than average comparing to world average by 0.9 and far low from world leader Denmark by 0.46 . Comparing to regional level (Africa), Algeria is above average and yet stills on average score in northern Africa while Tunisia is taking the lead.

Figure 3: EGDI chart comparison



Source: (UNeGovKB)

2 E-portals evaluation:

2.1 A brief reminder about the criterion

Table 4: evaluation criteria

	Criteria	Description
Content	Information about the ministry	Portal contains basic information about the ministry
	Search option	Portal allows a user to search contents
	Link to other ministries/organizations	Portal contains links to other ministry/organization portals or social media pages
	Online consultations	Portal allows a user to consult online documents
	Forms	Portal allows a user to download/upload relevant forms
	Contact	Portal has 'Contact Us' information
Us	Multilingual	Portal allows a user to choose different languages

	Accessibility	Portal allows users with disabilities to use it
	Availability	Portal offers online services all the time and no dead links
	Operability	Portal contains a map, allows users to return to any page on it
Quality	User interface aesthetics	Portal looking, pages clarity, names of e-gov services, contains graphic icons...etc.
	Speed	Portal Loading/transaction speed
	User error protection	Portal protects users from wrong data entry and informs them to correct it
	Updating	Portal is updated regularly
	Registration	Portal allows a user to register or sign up
	Applying for certificates or licenses	Portal allows application for certificates/licenses
	Financial transactions	Portal allows sending payments and fees online
Citizen engagement	E-voting	Portal allows a user to vote online
	Web comment form	Portal contains user comment forms
	Feedback	Portal allows a user to send feedbacks to the ministry
	FAQ	Portal contains a frequently asked questions section
	Support	Quick response to users' inquiries
	Citizens views & democratic participation in decision making	Portal attracts citizens through their opinion sections/forums and other methods that allow citizens to participate in decision-making
Security	Confidentiality	Portal ensures that only the authorized users view and use their private content
	Integrity	Portal has data protection from unauthorized modifications (e.g., add, delete, or change)

Source: elaborated by our cares

2.2 Benchmarking:

2.2.1 E-government portal in the UK:

GOV.UK is the website for the UK government. It provides different government services and information, such as:

- information and services for citizens and businesses. (driving and transport, Money and tax, visas and immigration, education and learning, Business and self-employed, crime, justice and the law...etc)
- detailed guidance for professionals.
- information on government and policy.

Users can access e-government services through personal registration services or using gov.uk Verify. Gov.uk Verify uses a certified company to verify citizens identity, thereby enabling citizens to verify their identity in order to use online services. Because it is decentralized, it is safe; because everything is online, it is fast. GOV.UK is constantly updated based on information of every government department and also on results from user research and feedback from members of the public.

Figure 4: British e-government portal

The screenshot shows the GOV.UK homepage. At the top, there is a black navigation bar with the GOV.UK logo and a yellow arrow pointing to 'Coronavirus (COVID-19) | Guidance and support'. Below this is a blue banner with the text 'Welcome to GOV.UK' and 'The best place to find government services and information. Simpler, clearer, faster'. A search bar is located in the center of the banner. To the right of the search bar, there is a 'Popular on GOV.UK' section with links to 'Coronavirus (COVID-19): guidance and support', 'Travel advice: coronavirus (COVID-19)', 'The UK has left the EU: check the new rules for January 2021', 'Find a job', and 'Sign in to your Universal Credit account'.

Below the banner, there is a grid of service categories:

- Benefits**: Includes eligibility, appeals, tax credits and Universal Credit
- Births, deaths, marriages and care**: Parenting, civil partnerships, divorce and Lasting Power of Attorney
- Business and self-employed**: Tools and guidance for businesses
- Childcare and parenting**: Includes giving birth, fostering, adopting, benefits for children, childcare and schools
- Citizenship and living in the UK**: Voting, community participation, life in the UK, international projects
- Crime, justice and the law**: Legal processes, courts and the police
- Disabled people**: Includes carers, your rights, benefits and the Equality Act
- Driving and transport**: Includes vehicle tax, MOT and driving licences
- Education and learning**: Includes student loans, admissions and apprenticeships
- Employing people**: Includes pay, contracts and hiring
- Environment and countryside**: Includes flooding, recycling and wildlife
- Housing and local services**: Owning or renting and council services
- Money and tax**: Includes debt and Self Assessment
- Passports, travel and living abroad**: Includes renewing passports and travel advice by country
- Visas and immigration**: Visas, asylum and sponsorship
- Working, jobs and pensions**: Includes holidays and finding a job

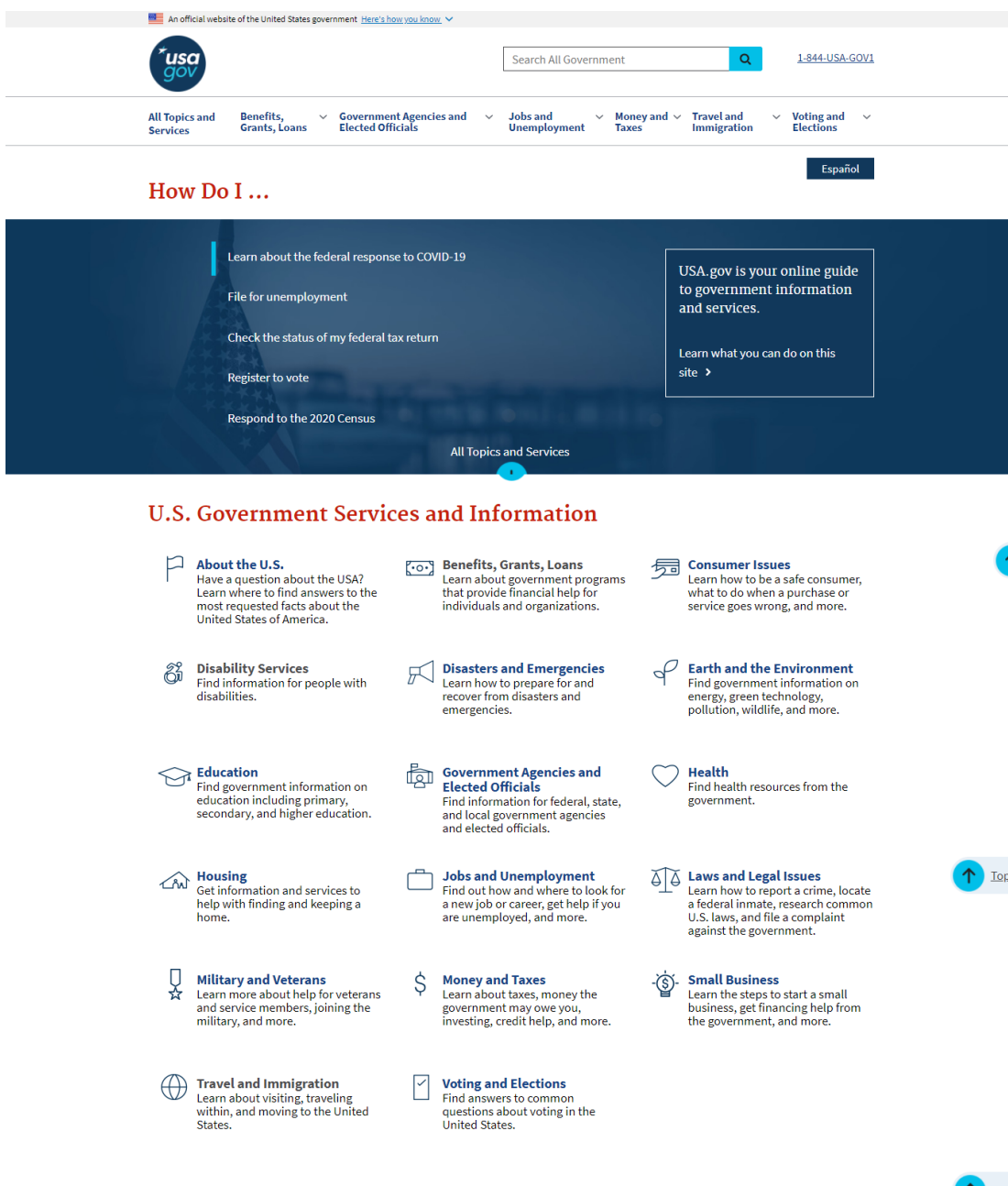
At the bottom of the page, there is a section with the number '23' representing 'Ministerial departments' and '412' representing 'Other agencies and public bodies'. Text explains that the websites of all government departments and many other agencies and public bodies have been merged into GOV.UK. It also provides links to 'news and communications, statistics and consultations' and 'how government services are performing'.

Source: gov.uk

2.2.2 E-government portal in the USA:

USA.gov is the official website of the United States government and a guide to information and services. It was first launched in 2000 under the name FirstGov.gov. The mission is to make it easier for everyone to find and understand the government services and information they need—anytime, anywhere, any way they want. The website contains 17 grouped topics of information and services such as: money and taxes, education, disability services, health, laws and legal issues, housing...etc. Each of these topics contains many online services provided for the citizen.

Figure 5: USA e-government portal



source: usa.gov

2.3 Chosen portals:

2.3.1 Ministry of justice:

Table 5: Ministry of Justice online portal evaluation

	Criteria	Current status	evaluation
Content	Information about the ministry	Minister / ministry / sector / juridical system	Excellent
	Search option	Available	
	Link to other ministries/organizations	Available (useful websites) / Facebook, Twitter, YouTube	
	Online consultations	Available	
	Forms	3 uploads / 1 download	
	Contact	Available	
Usability	Multilingual	French / Arab	Good
	Accessibility	Not available	
	Availability	Website working 24/7 ; No dead links found	
	Operability	Portal contains a map, excellent & smooth website browsing	
Quality	User interface aesthetics	Good looking, divided into blocks and sections containing online services, contains graphic icons and illustrations	Good
	Speed	High navigation speed	
	User error protection	Available	
	Updating	Portal is well updated / contains different news	
	Registration	Not available	
	Applying for certificates or licenses	Biometric professional card / electronic documents authentication	
	Financial transactions	Not available	
Citizen engagement	E-voting	Only a poll about website rating	Poor
	Web comment form	Not available	
	Feedback	Not available	
	FAQ	Available	
	Support	Not available online (only 1078 hotline)	
	Citizens views & democratic participation in decision making	Not available	

Security	Confidentiality	Available through citizen's account	Excellent
	Integrity	Portal has HTTPS protection / Guarantees the identity of a remote computer / Guarantees the users' identity with a remote computer	

Source: elaborated by our cares

2.3.2 Ministry of Interior, Local Authorities and Territorial Planning:

Table 6: Ministry of Interior online portal evaluation

	Criteria	Current status	evaluation
Content	Information about the ministry	Minister / ministry / local authorities	Good
	Search option	Available (not working)	
	Link to other ministries/organizations	Available (useful websites) / Facebook, Twitter, YouTube	
	Online consultations	Not available	
	Forms	20 download forms	
	Contact	Available	
Usability	Multilingual	French / Arab	Fair
	Accessibility	Not available	
	Availability	Portal working 24/7 ; several dead links found	
	Operability	Portal contains a map, medium website browsing	
Quality	User interface aesthetics	Small font, basic looking, divided into blocks and sections containing online services, contains graphic icons and illustrations	Poor
	Speed	Medium	
	User error protection	Not available	
	Updating	Portal not updated	
	Registration	Available	
	Applying for certificates or licenses	Not available	
	Financial transactions	Not available	

Citizen engagement	E-voting	Not available	Very poor
	Web comment form	Not available	
	Feedback	Portal allows the user an online request or claim or suggestion	
	FAQ	Not available	
	Support	Not available	
	Citizens views & democratic participation in decision making	Not available	
Security	Confidentiality	Available through citizen's account	Good
	Integrity	Portal has HTTPS protection/ Guarantees the identity of a remote computer / Guarantees the users' identity with a remote computer	

Source: elaborated by our cares

2.3.3 Ministry of Commerce:

Table 7: Ministry of Commerce online portal evaluation

	Criteria	Description	evaluation
Content	Information about the ministry	Central administration/ external services/ supervised organizations	Good
	Search option	Available (not working)	
	Link to other ministries/organizations	Available (useful websites) / Facebook, Twitter, YouTube, LinkedIn	
	Online consultations	Not available	
	Forms	45 downloads	
	Contact	Available	
Usability	Multilingual	French/ Arab / English (not working)	Fair
	Accessibility	Not available	
	Availability	Portal working 24/7 ; several dead links	
	Operability	Portal contains a map, medium website browsing	

Quality	User interface aesthetics	New portal, clear font, too many sections, 3 online services section, poor graphic icons and illustrations	Fair
	Speed	Medium navigation speed	
	User error protection	Information not available	
	Updating	Portal is updated / contains different news	
	Registration	Available (not working)	
	Applying for certificates or licenses	Not available	
	Financial transactions	Only through CNRC portal	
Citizen engagement	E-voting	Not available	Poor
	Web comment form	Not available	
	Feedback	Not available	
	FAQ	Available	
	Support	Portal has a listening cell	
	Citizens views & democratic participation in decision making	Only through listening cell	
Security	Confidentiality	Portal not secure on space of exchange (https://portail.commerce.gov.dz/remote/login?lang=en)	Fair
	Integrity	Portal has HTTPS protection / Guarantees the identity of a remote computer / Guarantees the users' identity with a remote computer	

Source: elaborated by our cares

2.3.4 Wilaya of Algiers:

Table 8: Wilaya of Algiers online portal evaluation

	Criteria	Description	evaluation
Content	Information about the Wilaya	The message of the wali / Presentation of the wilaya/ The administrative districts/ International cooperation	good
	Search option	Available	
	Link to other ministries/organizations	Available (useful websites) / Facebook, Twitter, YouTube	
	Online consultations	Not available	
	Forms	Not available	

	Contact	Available	
Usability	Multilingual	French/ Arab/ English	Fair
	Accessibility	Not available	
	Availability	Portal working 24/7 ; no dead links	
	Operability	Not available	
Quality	User interface aesthetics	Portal well structured, clear pages and font, names of online services, contains graphics, icons, images	Poor
	Speed	Medium	
	User error protection	Not available	
	Updating	Portal is not updated	
	Registration	Not available	
	Applying for certificates or licenses	Not available	
	Financial transactions	Not available	
Citizen engagement	E-voting	Not available	Very poor
	Web comment form	Not available	
	Feedback	Not available	
	FAQ	Not available	
	Support	Not available	
	Citizens views & democratic participation in decision making	Not available	
Securi	Confidentiality	Not available	Very poor
	Integrity	Website not secured	

Source: elaborated by our cares

2.3.5 CNAS:

Table 9: CNAS online portal evaluation

	Criteria	Current status	evaluation
Content	Information	Available	Excellent
	Search option	Not available	
	Link to other ministries/organizations	Available / Facebook, Twitter, YouTube, Flickr	
	Online consultations	Available (through hosted portals)	
	Forms	Available (documents and leaflets)	
	Contact	Available	

Usability	Multilingual	French / Arab / Amazigh	Very good
	Accessibility	Not available	
	Availability	Website working 24/7 ; No dead links found	
	Operability	Portal contains a map, excellent & smooth website browsing	
Quality	User interface aesthetics	Good looking, divided into section and a block containing online services, contains graphic icons and illustrations	Very good
	Speed	High navigation speed	
	User error protection	Available	
	Updating	Portal is well updated	
	Registration	Not available	
	Applying for certificates or licenses	Not available	
	Financial transactions	Available through e-payment	
Citizen engagement	E-voting	Not available	Very poor
	Web comment form	Not available	
	Feedback	Not available	
	FAQ	Not available	
	Support	Not available	
	Citizens views & democratic participation in decision making	Not available	
Security	Confidentiality	Available through users' account	Excellent
	Integrity	Portal has HTTPS protection / Guarantees the identity of a remote computer / Guarantees the users' identity with a remote computer	

Source: elaborated by our cares

3 Results discussion

The most important requirement for the success of e-government projects is the establishment of a specific strategy and determine the goals and objectives, and e-Algeria 2013 is an integrated project in all aspects, but it needs efforts of all stakeholders and providing the necessary funds, in addition to the political will and citizens engagement and support so that the project can succeed and achieve its objectives.

Yet e-government projects in Algeria still struggle due to delays in completing the ICT infrastructure, limited internet use, lack of citizens awareness of the availability of e-government services, incompetent back-office staff, and most importantly the failure of policy for the implementation of administrative development plans affected by bureaucracy and politicians decisions.

Despite the noticeable progress Algerian government made these last 2 years in terms of e-government development, especially infrastructure development which provides a solid foundation for improving online services, we see that online services scope and quality still weak compared to other countries. Online services provision should be integrated with investments in improving the telecommunications infrastructure and offering online services can enable the government to be more efficient, open, transparent, and inclusive. Even if the global trend and norm recommended by the UN is the one-stop-shop service delivery, also named integrated portal (centralizing all the e-information, e-services, e-participation, open data, and other online features into one portal), the Algerian strategy is still working on a decentralized approach (different websites for different topics and services) and that creates a gap between different sectors in terms of modernization

In order to give an overview of our case "online portals" and an overall analysis, we present the following summarizing table:

Table 10: Summarizing evaluation

	Ministry of Justice	Ministry of Interior	Ministry of Commerce	Wilaya of Algiers	CNAS
Content	Excellent	Good	Good	Good	Excellent
Usability	Good	Fair	Fair	Fair	Very good
Quality	Good	Poor	Fair	Poor	Very good
Citizen engagement	Poor	Very poor	Poor	Very poor	Very poor
Security	Excellent	Good	Fair	Very poor	excellent

Source: elaborated by our cares

As from what we see from appendices and the table above, the justice sector has made significant progress in the use of information and communication technologies. Several projects have been implemented to achieve modern justice in line with international standards, including facilitating access to justice for all categories of society, simplifying and improving judicial and administrative procedures, as well as providing remote judicial services for the benefit of citizens, litigants, and court workers.

Efforts in this area have enabled the establishment and development of an internal communication network dedicated to the justice sector, linking the central administration to all jurisdictions, penitentiary institutions, and supervised agencies using fiber optics. It is an essential infrastructure and material base for exploiting the various information systems developed by the skills of the sector.

There is no doubt that Ministry of Justice is the most advanced sector amongst other sectors in terms of implementing modernization projects and digitizing different services to offer them through the online portal (Appendix-A-) and not only the informational and interactional services (such as addresses, applications forms, contacts, consulting online documents ...etc.), but also transactional ones (applying for biometric professional card, electronic documents authentication...etc), which makes the justice sector at the end of the transaction phase of e-government maturity and ready to enter the integration phase. The website is well designed, simple, and well structured, divided into 5 sections (ministry, legal texts, online services, justice professions, and media), very well secured, and all links work and it appears to be well maintained because all the information is updated.

However, there are still some gaps such as engaging the user or citizen to fulfill their requirements, feedback as an example isn't available as well as online support which helps the ministry to take better decisions in terms of improving its online services and citizens well-being to achieve the satisfaction level. In addition, citizens still have to get to court for the first time in order to request an online account (username & password) to access different services, and that can be replaced with an online registration using the national ID to reduce time and effort.

The Ministry of Interior claimed to launch a large modernization program, but we didn't see that through the online portal in Appendix-B-, we see that its design is still basic and poor in terms of design and bugs sometimes with difficulties when surfing the website, as for the online services offered we can say that the website is at the interactional phase of maturity because they're only about downloadable forms, entering personal information and taking

an appointment at municipalities or filing them requests which means that the citizen still has to be on-site to take the papers, on the other hand we noticed that the ministry's portal redirects the user to different portals of online services previously mentioned.

Although this is a critical sector and its services concerns different segments of society, the citizen engagement is at a very poor level, besides the request and claim section, we didn't notice FAQ section nor feedback nor the support for users which are really necessary for online portals even at their starting level.

Offering complete online services and engaging citizens in taking decisions would allow each citizen to customize the site or portal in order to have even faster access to services corresponding to their specific needs and on the other hand generally would reduce travel, avoid queues, and reduce the time, and for municipalities it would reduce the workload of physical booth by allowing citizens to inform themselves, extract different administrative papers and answer all their questions electronically.

As for the Wilaya of Algiers online portal shown in Appendix-E- we clearly see that it is obsolete and out of date, the website tends to be only an informational website and doesn't have any online services provided, at least for Algiers residents. The website is not secure unlike most websites nowadays with HTTPS protection. Algiers online portal could be very useful to all citizens in general and Algiers' residents in particular, if responsables invest in maintaining the website and providing online services, some services can be for information such as: transportation, network, health, streets & traffic...etc. some others can be for payment such as: taxes, housing, parking tickets...etc. So that would facilitate the lives of citizens, reduce crowding, reduce wilayas expenses, increase citizens' engagement in making decisions, and much more advantages.

The ministry of commerce online portal, in Appendix-C-, itself was recently updated, we noticed that it's well-structured and good in terms of providing content such as downloadable forms, information for users, FAQ section but slow in navigation speed. The website is in 3 languages but English doesn't seem to work. In addition, we couldn't find anything in terms of engaging citizens unless the only online service provided which is the online request that offers to collect different concerns, requests of citizens but that stills for administrative purposes and not improving the website. The space of exchange is basically provided for administrations under the ministry and is not secured. The ministry of commerce doesn't provide much of online services and the e-portal tends to be at the information stage of maturity or at most at the beginning of the transaction phase yet the website can be

technically improved. The ministry of commerce can engage more of the opinion of users to answer their requirements and invest in providing more online services to all different stakeholders due to the vast responsibilities of this body on the national and international level.

CNAS began to digitize its services and updated them in recent years with the spread of ICT. These implementations were intended to enable the fund to improve the performance of its staff and reduce waste, among other things, and thus achieve better operational performance.

The website shown in Appendix-D-, is modern and well organized, and nicely illustrated, it represents an informational space offering insights on all aspects related to the activity of the CNAS, by making available to all users reliable and regularly updated information, it is proposed in 3 languages French, Arab and Amazigh which is good for different segments of users, it also shows the portals for its online services on one section (these portals are external and hosted on cnas.dz) and it is very well secured to protect users data. Nevertheless, there is no FAQ nor pools nor feedbacks section which means that CNAS doesn't look forward to the user's opinion to improve the quality of its services even though users are clients for this institution. CNAS could integrate all of its services into one online portal instead of separate external portals to facilitate access to its services considering that's the global trend, and also engage citizens' opinions to improve them and even more, digitize more services that users need.

4 Suggestions:

In terms of strategy:

- Create an independent committee with complete authority to design and implement e-government projects and supervise shared databases between all sectors/ministries.
- Relaunch a new strategy like e-Algerie 2013 with a new vision and new objectives that mainly focus on integrating online services, and one government e-portal as a finality.
- Coordinate and collaborate between different sectors to provide better quality integrated services.
- Train and motivate competent staff to manage and maintain e-government services.

In terms of online services:

- Digitize more services and provide them online.
- Sensitize citizens with new ICT and newly launched online services.
- Introduce cloud computing, data, and web infrastructure equipment.
- Create mobile apps for anywhere/anytime service availability.

In terms of e-portals:

- Introduce e-payment methods to pay online fees and taxes.
- Engage more of users/citizens opinions online through pools, forums, feedback to improve the quality of the website, and the satisfaction of users.
- Enable the online registration with the national ID.
- Provide online support for users.
- Collaborate with content creators who will contribute to the development.

CONCLUSION

The rapid evolution of ICTs nowadays proved that they are of paramount importance in society and therefore must be seen as a strategic sector contributing to a large extent to economic and social development. From this point, we saw the huge effect of ICT that became a priority to integrate into public administration regimes, to form teams with effective leadership and capable of working on e-government projects. E-Government should lead to more efficient administration through simplifications of work and administrative processes.

Indeed, e-government is much more than a simple website on the web, or a simple e-mail or processing transactions via the internet. Effective e-government must address the complexities of the project, the technological and cultural challenges that governments will face, the services available to citizens, digital democracy, and economic development. Besides, a discussion on the strategy, which needs to be implemented, as well as the framework for implementing and arranging the management of the system should be planned.

The purpose of this research was to:

- Emphasize the key elements to elaborate an e-government project strategy.
- Give a holistic view of some Algerian key sectors' governmental online services at the current time.
- Evaluate government online portals.

We saw the strategy of e-government and its elements in the theoretical frame chapter, where we presented different aspects of the theme in addition to the requirements needed and challenges.

From our case study that was about Algeria's strategy of digitization and evaluating online portals of Ministry of Justice, Ministry of Interior, Ministry of Commerce, National Social Insurance Fund, Wilaya of Algiers, we wanted to answer the following problematic: What progress did the Algerian e-government strategy achieve in terms of online services?

Therefore, we choose to follow a qualitative research approach to describe and explain the achieved results.

Despite the limited budgets, developing countries are still investing heavily in e-government. Sustaining successful e-government initiatives is crucial to governments in developing countries because these countries have a high rate of failure, which also shows that the problem is challenging and poorly understood. As it is for the Algerian government, the UN

international ranking shows that Algeria is one of the average countries in the field of e-government being 120 from 193 countries even though it's in high EGDI group, with a very low rate of OSI despite recent projects and the provision of numerous electronic and online services in which citizens previously faced many administrative obstacles that limit their access to better service. Therefore, an important action to be taken is to work on filling the gaps between the strategic plan of e-government projects and the actual situation of administrations to bring them into the digital era.

After going through the chosen e-portals we saw that:

- Websites were found either at 1st stage (information) or beginning of 2nd (transaction) stage at most except for CNAS that introduced e-payment methods.
- Justice sector is progressing at a steady pace by introducing more online services on its portal due to "direction de modernisation de la justice" that is responsible on updating and digitizing different services of the ministry.
- Lack of citizen engagement through all portals in general even though the citizen/user is the main concerned.
- Absence of e-payment methods to pay online fees, taxes...etc.
- The need to be on site to get an account instead of online registration.
- There is no collaboration between different sectors which means that high levels of e-government maturity can never be reached.

This study can be used to develop a plan to improve the strategy of e-government services as well as supporting evidence on the status of government online portals in Algeria for both employees and researchers who develop studies on Algerian government online portals.

This study also has some limitations, due to the Covid-19 pandemic we were unable to rejoin and keep up with the internship so we had no choice but to evaluate online services by ourselves. The websites sample assessed were limited to 5 and provided online information were also restricted.

The limitations of this study provide directions for future researches, we recommend evaluating more e-government portals so that study would be more accurate, and work on a specific strategy of providing online services and methods to improve e-portals quality.

BIBLIOGRAPHY

- Abu-Shanab, Emad & Bataineh, Lana. (2014), *Challenges Facing E-government Projects: How to Avoid Failure?*, Int. J. Emerg. Sci., 4(4), 207-217
- ALSHEHRI, M and DREW, S, (2010) Implementation of e-Government: Advantages and Challenges, *International Association for Scientific Knowledge (IASK)*, 8-10 November, Oviedo, Spain
- Archmann, S., & Iglesias, J.C. (2010). *eGovernment: A Driving Force for Innovation and Efficiency in Public Administration*.
- Asma Al-Hashm, Abdul Basit Darem(2008). *Understanding Phases of E-government Project*.
- Denzin, N. K., & Lincoln, Y. S. (2005). *The SAGE handbook of qualitative research*. Thousand Oaks: Sage Publications.
- Gavard-Perret, M.-L., Goutteland, D., Haon, C., & Jolibert, A. (2012). *Méthodologie de la recherche en sciences de gestion*. Montreuil: Pearson France.
- Georgescu, Mircea. (2007). Challenges for E-Government Strategy. *Informatica Economica Journal*, nr.3(43)
- Inderjeet, S. (2016). Application of e-government in developing countries—issues, challenges and prospects in India. *S O C R A T E S*, 4(3), 91-109.
- infoDev/World Bank, (2009). *e-Government Primer*, Washington, DC; infoDev/World Bank
- Kettani, Driss & Moulin, Bernard. (2014). *E-Government for Good Governance in Developing Countries*, UK, Anthem Press.
- Khalid, Suhaina & Lavilles, Rabby. (2019). Maturity Assessment of Local E-government Websites in the Philippines, *Procedia Computer Science*, 161, 99-106.
- Lee, N. Y., & Oh, K. (2010). E-Government applications. *United Nations Asian and Pacific Training Centre for Information and Communication Technology for Development*, 3(1), 1-9, Republic of Korea.
- Mahmud Akhter Shareef, Vinod Kumar, Uma Kumar, Yogesh K. Dwivedi, (2011), e-Government Adoption Model (GAM): Differing service maturity levels, *Government Information Quarterly*, Volume 28, Issue 1, Pages 17-35.
- Mkude C.G., Wimmer M.A. (2013). Strategic Framework for Designing E-Government in Developing Countries. In: Wimmer M.A., Janssen M., Scholl

- H.J. (eds) *Electronic Government. EGOV 2013. Lecture Notes in Computer Science*, vol 8074. Springer, Berlin, Heidelberg
- Mkude C.G., Wimmer M.A. (2015). E-government Systems Design and Implementation in Developed and Developing Countries: Results from a Qualitative Analysis. *14th International Conference on Electronic Government (EGOV)*, Aug 2015, Thessaloniki, Greece. pp.44-58,
 - N'DA, Paul (2015). « *Recherche et méthodologie en science sociales et humaines : réussir sa thèse, son mémoire de master ou professionnel et son article* », Editions l'Harmattan.
 - OCDE (2018), *Perspectives de l'économie numérique de l'OCDE 2017*, Paris, Editions OCDE.
 - OCDE (2018), *Promoting the Digital Transformation of African Portuguese-Speaking Countries and Timor-Leste*, OECD Digital Government Studies, Éditions OCDE, Paris.
 - OECD (2016), *Digital Government in Chile: Strengthening the Institutional and Governance Framework*, OECD Digital Government Studie, Paris, OECD Publishings.
 - Pr.Mezhouda, Abdelmalik (2018), *La gestion du Service public à l'ère du numérique: De l'E-Gouvernement à l'E-Gouvernance. Où en est l'Algérie ?*
 - République Algérienne Démocratique et populaire, e-commission (2008). *E-Algérie 2013*
 - Richard, Heeks (2006). *Implementing and Managing eGovernment: AN INTERNATIONAL TEXT*, sage publications, London.
 - Rowley, Jennifer E. (2011). "e-Government stakeholders - Who are they and what do they want?" *Int. J. Inf. Manag.* 31: 53-62.
 - Sameer Goel, Rajeev Dwivedi, and Arun Sherry, (2012) "Role of Key Stakeholders in Successful E-Governance Programs: ConceptualFramework". *AMCIS 2012 Proceedings*. Paper 19.
 - Signore, Oreste & Chesi, Franco & Pallotti, Maurizio. (2005). E-government: challenges and opportunities. *CMG Italy - XIX Annual Conference 7-9 June 2005 Florence, Italy*.

- UN (2018), *United Nations E-Government Survey 2018: Gearing E-Government to Support Transformation Towards Sustainable and Resilient Societies*, UN, New York.
- UN (2020), *United Nations E-Government Survey 2020: Digital Government in the Decade of Action for Sustainable Development*, UN, New York.
- UNeGovKB (Page consulted on august 18, 2014). (<https://publicadministration.un.org/egovkb/>)
- UNITED NATIONS (2014), *E-GOVERNMENT SURVEY 2014: E-Government for the Future We Want*, Department of Economic and Social Affairs, New York, United Nations.
- United Nations Department of Economic and Social Affairs (2018), COMMISSION ON SCIENCE AND TECHNOLOGY FOR DEVELOPMENT (CSTD), Twenty-first session, Geneva.
- University of Newcastle Library guides (page consulted November 10, 2020). Research Methods: What are research methods?,[online data], <https://libguides.newcastle.edu.au/researchmethods>
- Yin, Robert. K. (2018). *Case study research: Design and methods*, USA, Sage Publications.
- Zhiyuan Fang, *International Journal of The Computer, The Internet and Management, Vol. 10, No.2, 2002, p. 1-22*, National Institute of Development Administration (NIDA), Thailand
- Ziemba, E., Papaj, T., & Descours, D. (2014). Assessing the quality of e-government portals - the Polish experience. *2014 Federated Conference on Computer Science and Information Systems*, 1259-1267.
- Ziemba, Ewa & Papaj, Tomasz & Descours, Danuta. (2014). Assessing the quality of e-government portals – the Polish experience, *Federated Conference on Computer Science and Information Systems*, 1259-1267, 10.13140/RG.2.1.2690.1603.
- Freeman, R. E. (1984). *Strategic Management: A Stakeholder Approach*, Boston, MA: Pitman.
- خطاف، ابتسام، غياط، شريف. (2018) توجه الجزائر نحو تطبيق الحكومة الالكترونية عبر مشروع الجزائر الالكترونية 2013: الواقع والتحديات. *مجلة العلوم الاقتصادية والتسيير والعلوم التجارية*. المجلد 11 / العدد: 02، ص 339-352
- زواري، فرحات سليمان، دراغو، عز الدين. (2017) إستراتيجية إقامة حكومة إلكترونية في الجزائر: من الفكرة إلى التطبيق. *مجلة العلوم الادارية والمالية، جامعة الشهيد حمه لخضر بالوادي*. الجزائر المجلد 1 العدد 1

APPENDICES

**APPENDIX A: MINISTRY OF JUSTICE
ONLINE PORTAL**

[Le Ministère](#)
[Les services](#)
[Professions et métiers de la justice](#)
[Coopération internationale](#)
[Médias](#)
[Contactez nous](#)

[Actualités du secteur](#)
[Inspection Générale du Ministère de la Justice](#)
[Avis d'infructuosité de l'appel d'offres](#)
[Condolances de Monsieur le Ministre de la Justice](#)


E-Services

- Nouveau : Parquet électronique
- Casier judiciaire
- Certificat de Nationalité Algérienne
- Authentification des documents électroniques
- Rectification des erreurs de l'état civil
- Copie de décret de naturalisation
- Consultation et suivi de votre affaire
- Retrait des jugements par les avocats
- Carte professionnelle biométrique
- Plateforme de formation à distance

Formulaires à remplir


- Casier judiciaire
- Attestation de détention durant la guerre
- Acte des tribunaux de la période coloniale

Activités




Avis d'infructuosité de l'appel d'offres
12 août 2020


[Lire la suite](#)




Condolances de Monsieur le Ministre de la Justice, Garde des sceaux, suite au décès du juge, le défunt Yacine Zenaidi
12 août 2020




Installation du nouveau président de la Cour d'Alger
11 août 2020




Avis d'infructuosité
10 août 2020




Lois et réglementations




Domaine des droits de l'homme



Réalizations et perspectives




Communiqués




Recherche d'un auxiliaire de justice

<https://www.mjustice.dz/fr/contactez-nous/>



République Algérienne Démocratique et Populaire

Ministère de la Justice



[Le Ministère](#)
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E-Services

- Parquet électronique
- Casier judiciaire
- Certificat de nationalité
- Authentification des documents électroniques
- Rectification des erreurs de l'état civil
- Copie de décret de dénaturalisation
- Consultation et suivi de votre affaire
- Retrait des jugements par les avocats
- Plateforme de formation à distance
- Carte professionnelle biométrique

Formulaires

Formulaires à remplir

- Casier judiciaire
- Attestation de détention durant la guerre
- Acte des tribunaux de la période coloniale

Formulaires à télécharger

- Fonds de la pension alimentaire

Guide des services

- Au niveau du ministère
- Au niveau des cours
- Au niveau des tribunaux
- Au niveau des postes diplomatiques ou consulaires
- Les attributions extrajudiciaires des juridictions
- Les activités judiciaires

<https://www.mjustice.dz/fr/#>

**APPENDIX B: MINISTRY OF
INTERIOR, LOCAL COMMUNITIES
AND REGIONAL PLANNING ONLINE
PORTAL**



COMMUNIQUÉ CONCERNANT LA CRÉATION D'ASSOCIATIONS ET DE COMITÉS DE QUARTIERS

COMMUNIQUÉ CONCERNANT LA CRÉATION D'ASSOCIATIONS ET DE COMITÉS DE QUARTIERS

DEMANDE D'INSCRIPTION D'UNE ASSOCIATION COMMUNALE À CARACTÈRE CULTUREL ET SOLIDAIRE, COMITÉ DE QUARTIER, DE VILLAGE, D'AGILIMINATION

DEMANDE D'INSCRIPTION D'UNE ASSOCIATION COMMUNALE À CARACTÈRE CULTUREL ET SOLIDAIRE, COMITÉ DE QUARTIER, DE VILLAGE, D'AGILIMINATION

LE REPONSE AVOIR D'AVANCE

S'INSCRIRE

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Espace citoyen

- Ma collectivité
- Médiathèque
- Ma sécurité
- Contacter l'inspection Générale
- Appel à contribution
- IDJRAATI
- Infomigrants

Formulaires



82999726_757707117966142_

83231591_2709212545828766

83322178_757707047966149_

83428931_757015491368638

83475727_867601820367747_

82999726_757707117966142_7440131929434750976_o

Services en ligne



Pour consulter la revue
[cliquez ici](#)

Espace Fonctionnaire

Organe de l'Action Sociale
Vous écoutez... vous accompagne

- Sociale
- Sociales
- Loisirs

Dossiers

- من أجل الجزائر جديدة
 Rencontre Gouvernement-Walis "Pour une Algérie Nouvelle"
 - des jeunes entreprises Start-up
 - Rencontre Gouvernement/ Walis 2018
- [Voir tous les dossiers](#)



**APPENDIX C: MINISTRY OF
COMMERCE ONLINE PORTAL**



01.10.2020 : Le Ministre du Commerce, Kamel Rezig a supervisé en compagnie du Ministre délégué chargé du Commerce Extérieur, Aissa Bekkal le lancement d'un programme de formations gratuites en faveur de 7.500 fonctionnaires et cadres

DERNIÈRES INFOS 27.08.2020 : Les commerçants sont tenus de mettre, à la disposition des consommateurs avant le 31 décembre prochain, des instruments ...

- Accès à la réglementation
 - Vos Fréquentes Questions
 - Requêtes en ligne
 - Formulaires
- Contact entre Monsieur le Ministre du Commerce et le Professeur Kamel Rezig et les citoyens
kamel.rezig@commerce.gov.dz



LETRE DE MONSIEUR LE MINISTRE
Le Ministère du Commerce ouvre, par le biais de ce site web, un espace de communication destiné à la communauté des hommes d'affaires, des opérateurs économiques, des investisseurs, des consommateurs, des universitaires, des chercheurs et de tous les utilisateurs des informations à caractère commercial

Le Ministère & ses services
Activités de Monsieur le Ministre
Accès à la réglementation
Médiathèque



LETRE DE MONSIEUR LE MINISTRE
La création d'un Ministère Délégué Chargé du Commerce Extérieur, entre dans le cadre de la nouvelle vision stratégique visant l'instauration d'une économie forte, pouvant faire face aux défis et enjeux économiques actuels, libérée de toute dépendance de l'étranger et de la fiscalité pétrolière, apte à mettre sur le marché des produits de qualité, capables au plan quantitatif de répondre au besoin du marché national ainsi que l'accès aux marchés extérieurs

- QUESTIONS FRÉQUENTES**
- A quoi est destiné le FSPE ?
 - Qui est concerné par le FSPE ?
 - Quelles sont les rubriques d'aides prévues par le FSPE ?
 - Quel pourcentage d'aide FSPE est accordé par le Ministère du Commerce ?
 - Où et quand introduire la demande d'aide FSPE ?
- Afficher toutes les questions -->

ACTUALITÉS

Une Décision interministérielle entre le ministère du commerce et le ministère de l'éducation national fixant le modèle type du contrat de la scolarité liant les établissements privés d'éducation et d'enseignement aux parents d'élève

Une Décision interministérielle entre le ministère du commerce et le ministère de l'éducation national fixant le modèle type du ...

Avis et Communiqués 13.10.2020

STATISTIQUES

Relevé des prix à consommateurs des produits alimentaires avril 2020

Relevé des prix à consommateurs des produits alimentaires avril 2020 sur le marché de détail des produits alimentaires de large ...

Relevé des prix des produits 23.07.2020

Appel d'offres
Avis d'appel d'offres

Le Ministère du Commerce lance un appel d'offres national ouvert avec exigence de capacités minimales *03/MC/DFMG/2020 portant ...

Avis et Communiqués 12.10.2020

Relevé des prix à consommateurs des produits alimentaires mai 2020

Relevé des prix à consommateurs des produits alimentaires mai 2020 sur le marché de détail des produits alimentaires de large ...

Relevé des prix des produits 23.07.2020

Avis aux Opérateurs Economiques

Le Ministère du Commerce porte à la connaissance de l'ensemble des opérateurs économiques le délai de dépôt des comptes sociaux ...

Avis et Communiqués 30.09.2020

Centre National du Registre du Commerce
Registre de commerce

Le nombre des nouveaux inscrits au registre de commerce durant le 1er semestre 2020 a enregistré une hausse par rapport à la même ...

Statistiques diverses 23.07.2020

Afficher toutes les actualités -->

Afficher tous les statistiques -->

ACCÈS PAR PROFIL

- Consommateur
- Importateur
- Exportateur
- Commerçants Gros & Détail

INFORMATIONS

- Réglementation
- Questions Fréquentes Posées
- Formulaires
- Guide du consommateur

SERVICES EN LIGNE

- Requêtes en ligne
- Rechercher une entreprise
- Prendre RDV au CNRC

RESSOURCES DOC

- Relevé des prix des produits
- Statistiques & Bilans
- Séminaires & Rencontres
- Bibliothèque

ÉCRIRE À LA CELLULE D'ÉCOUTE DU MINISTÈRE DU COMMERCE Écrire

Pour vous aider dans vos échanges avec le ministère, trouver le bon interlocuteur et saisir les services du ministère par voie électronique.

Rejoignez-nous sur les réseaux sociaux :

- Facebook
- Twitter
- Google+
- LinkedIn
- YouTube

INFOS PRATIQUES

- Comment créer son entreprise
- Modalités d'inscriptions au RC
- Professions Représentées
- Création d'un Bureau de liaison
- Commerçant étranger
- Dépôt des comptes sociaux
- Dépôt des comptes sociaux

PROTECTION DU CONSOMMATEUR

- Guide du consommateur
- Sensibilisation du consommateur

COMMERCE EXTÉRIEUR

- Foires et expositions
- Manifestations économiques
- Aides et avantages fiscaux
- Manifestations économiques
- Aides et avantages fiscaux
- Accords commerciaux
- Licences d'importation et d'Exportations

ACTIVITÉS DE CONTRÔLE

- Contrôle aux frontières
- Codex alimentarius

INFOS DE CONTACT

Ministère du Commerce - Cité Zerhouni Mokhtar El-Mohammadia, (P.X. les Bananiers) - ALGER
Tél : (+213) 021 89 00 74/85
Fax : (+213) 021 89 00 34
Courrier : contact@commerce.gov.dz
Tél : (+213) 021 89 00 74/85
Fax : (+213) 021 89 00 34
Courrier : contact@commerce.gov.dz

COMMERCE & CONCURRENCE

- Concurrence
- Ventes en soldes
- Marchés publics
- Code du commerce

S'ABONNER À NOTRE NEWSLETTER

Votre adresse email S'abonner

Messagerie Ministère du Commerce

APPENDIX D: CNAS ONLINE PORTAL

Accueil La CNAS Services CHIFA Téléchargement

Accueil

Mot du Directeur Général

Ce site, sous sa nouvelle mouture, constitue un facteur promotionnel de notre image de marque et un outil de communication qui contribue significativement à une synergie d'actions que nous comptons bâtir, car il représente un espace informationnel offrant des éclairages sur tous les aspects liés à l'activité de la CNAS, en mettant à la disposition de tous les usagers, des informations fiables et régulièrement mises à jour. **Lahfaya Abderrahmane.**

[Lire la suite](#) [Discours du DG](#)

Ministère du Travail, de l'Emploi et de la Sécurité Sociale

**Bienvenue sur le site de la
Caisse Nationale des Assurances Sociales des Travailleurs Salariés**

Nos Services

<p>Contrôle Medical</p> <p>Conseiller et accompagner les assurés sociaux et les professionnels de santé sur la réglementation médico-sociale pour une meilleure prise en charge médicale...</p> <p>Lire la suite</p>	<p>Prestations</p> <p>Gestion des prestations des assurances sociales, des accidents de travail et des maladies professionnelles et, à titre transitoire, des prestations familiales...</p> <p>Lire la suite</p>	<p>Recouvrement et contentieux</p> <p>Le recouvrement des cotisations de sécurité sociale destinés au financement des prestations de toutes natures...</p> <p>Lire la suite</p>
<p>Prévention</p> <p>Veiller à la prévention des travailleurs des accidents du travail et de maladies professionnelles</p> <p>Lire la suite</p>	<p>Cellule d'écoute</p> <p>Accueil, Orientation et accompagnement des usagers. Gestion, traitement et suivi des requêtes...</p> <p>Lire la suite</p>	<p>Action Sanitaire et Sociale</p> <p>Répondre aux besoins des assurés sociaux et de leurs ayants droit, en matière de prise en charge socio-sanitaire...</p> <p>Lire la suite</p>

**APPENDIX E: WILAYA OF ALGIERS
ONLINE PORTAL**



Wilaya of Algiers



SMART CITIES
Global investment and technology summit
26-27-28th JUNE 2018

Leapfrog Hack | Smart Cities Global Summit Hackathon
May 28, 2018

Club Scientifique de l'ESI

GALLERY



NEWS

CALL FOR EXPRESSION OF INTEREST
JANUARY 27, 2019

Digital transformation of Service Economy can drive growth across Middle East and Africa...
APRIL 30, 2018

Sensibilization campaign on the vote at Hussein Day
NOVEMBER 22, 2017

SEE MORE

Leapfrog Hack | Smart Cities Global Summit Hackathon
MAY 28, 2018

Smart Cities Global Summit hosted by Smart City Algiers announced to assess the latest technology and investment strategies
APRIL 12, 2018

Mr. Abd El Kader Zoukh inspects development projects in Rouba
NOVEMBER 22, 2017

VIDEOS



SEARCH

CALENDAR

October 2020						
M	T	W	T	F	S	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

« JAN

Our Social Networks



APPENDIX F: UN E-GOVERNMENT SURVEY

Table 1.2. Country EGDl groupings and rating classes within EGDl groups (from highest to lowest) in 2020 and movement between EGDl groups between 2018 and 2020

Very High EGDl 2020 (Greater than 0.75)	Rating Class	Movement within group	High EGDl 2020 (Between 0.50 and 0.75)	Rating Class	Movement within group	Middle EGDl 2020 (Between 0.25 to 0.50)	Rating Class	Movement within group	Low EGDl 2020 (Less than 0.25)	Rating Class	Movement within group
Turkey	V1	H to VH	Cabo Verde	H2	M to H	Djibouti	M1	L to M			
Brazil	V1	H to VH	Egypt	H1	M to H	Haiti	M1	none			
Romania	V1	H to VH	Saint Lucia	H1	M to H	Gambia (Republic of The)	M1	none			
Costa Rica	V1	H to VH	Gabon	H1	M to H	Liberia	M1	none			
Thailand	V1	H to VH	Jamaica	H1	M to H	Guinea	M1	L to M			
			Botswana	H1	M to H	Democratic Republic of the Congo	M1	none			
			Kenya	H1	M to H	Equatorial Guinea	M1	L to M			
			Jordan	H1	none						
			Venezuela, Bolivarian Republic of	H1	none						
			Bangladesh	H1	M to H						
			Algeria	H1	M to H						
			Guatemala	H1	M to H						
			Suriname	H1	M to H						
			Nicaragua	H1	M to H						
			Cambodia	H1	M to H						
			Palau	H1	none						
			Zimbabwe	H1	M to H						

Source: 2018 and 2020 United Nations E-Government Surveys.

Table 1.4 Country groupings by Online Services Index (OSI) level, 2020

Country	Very High OSI		High OSI		Middle OSI		Low OSI	
	OSI 2020	Corresponding EGD level	Country	OSI 2020	Corresponding EGD level	Country	OSI 2020	Corresponding EGD level
Republic of Moldova	0.7529	High EGD				Yemen	0.3235	Middle EGD
						Venezuela, Bolivarian Republic of	0.3176	High EGD
						Tajikistan	0.3176	Middle EGD
						Congo	0.3176	Middle EGD
						Sudan	0.3059	Middle EGD
						Sierra Leone	0.3059	Middle EGD
						Tuvalu	0.3000	Middle EGD
						Niger	0.2941	Low EGD
						Somalia	0.2941	Low EGD
						Suriname	0.2882	High EGD
						Madagascar	0.2882	Middle EGD
						San Marino	0.2824	High EGD
						Algeria	0.2765	High EGD
						Palau	0.2765	High EGD
						Belize	0.2647	Middle EGD
						Samoa	0.2647	Middle EGD
						Cuba	0.2588	Middle EGD
						Myanmar	0.2588	Middle EGD
						Zambia	0.2588	Middle EGD

Source: 2020 United Nations E-Government Survey.

Table 2.1 Countries in Africa with the highest EGDl values

Table : Top countries for e-government in Africa								
Country	Rating class	EGDI Rank	Sub-Region	OSI value	HCI value	TII value	EGDI (2020)	EGDI (2018)
Mauritius	HV	63	Eastern Africa	0.7000	0.7911	0.6677	0.7196	0.6678
Seychelles	H3	76	Eastern Africa	0.6176	0.7660	0.6925	0.6920	0.6163
South Africa	H3	78	Southern Africa	0.7471	0.7371	0.5832	0.6891	0.6618
Tunisia	H3	91	Northern Africa	0.6235	0.6974	0.6369	0.6526	0.6254
Ghana	H2	101	Western Africa	0.6353	0.5930	0.5596	0.5960	0.539
Namibia*	H2	104	Southern Africa	0.5235	0.6558	0.5447	0.5747	0.4554
Morocco	H2	106	Northern Africa	0.5235	0.6152	0.5800	0.5729	0.5214
Cabo Verde*	H2	110	Western Africa	0.5000	0.6337	0.5476	0.5604	0.498
Egypt*	H1	111	Northern Africa	0.5706	0.6192	0.4683	0.5527	0.488
Gabon*	H1	113	Middle Africa	0.3235	0.6719	0.6250	0.5401	0.4313
Botswana*	H1	115	Southern Africa	0.3647	0.6911	0.5591	0.5383	0.4253
Kenya*	H1	116	Eastern Africa	0.6765	0.5812	0.3402	0.5326	0.4541
Algeria*	H1	120	Northern Africa	0.2765	0.6966	0.5787	0.5173	0.4227
Zimbabwe*	H1	126	Eastern Africa	0.5235	0.6135	0.3688	0.5019	0.3692

* Countries that moved from the middle to the high EGDl group in 2020.

Source: 2020 United Nations E-Government Survey

Annex Table 2. E-Government Development Index (EGDI)

Country	EGDI Level	Rating Class	Rank	EGDI	Online Service Index	Telecommunications Infrastructure Index	Human Capital Index
Afghanistan	Middle EGDI	M2	169	0.3203	0.4118	0.1762	0.3728
Albania	High EGDI	HV	59	0.7399	0.8412	0.5785	0.8001
Algeria	High EGDI	H1	120	0.5173	0.2765	0.5787	0.6966
Andorra	High EGDI	H3	80	0.6881	0.4824	0.8372	0.7448
Angola	Middle EGDI	M2	159	0.3847	0.4882	0.1364	0.5295
Antigua and Barbuda	High EGDI	H2	98	0.6055	0.4471	0.6176	0.7518
Argentina	Very High EGDI	V2	32	0.8279	0.8471	0.7265	0.91
Armenia	High EGDI	HV	68	0.7136	0.7	0.6536	0.7872
Australia	Very High EGDI	VH	5	0.9432	0.9471	0.8825	1
Austria	Very High EGDI	V3	15	0.8914	0.9471	0.824	0.9032
Azerbaijan	High EGDI	HV	70	0.71	0.7059	0.6528	0.7713
Bahamas	High EGDI	HV	73	0.7017	0.6765	0.6739	0.7546
Bahrain	Very High EGDI	V2	38	0.8213	0.7882	0.8319	0.8439
Bangladesh	High EGDI	H1	119	0.5189	0.6118	0.3717	0.5731
Barbados	High EGDI	HV	62	0.7279	0.5765	0.7523	0.8549
Belarus	Very High EGDI	V2	40	0.8084	0.7059	0.8281	0.8912
Belgium	Very High EGDI	V2	41	0.8047	0.6588	0.8033	0.9521
Belize	Middle EGDI	MH	136	0.4548	0.2647	0.4079	0.6919
Benin	Middle EGDI	M2	157	0.4039	0.5118	0.2595	0.4404
Bhutan	High EGDI	H2	103	0.5777	0.6824	0.5367	0.5139
Bolivia (Plurinational State of)	High EGDI	H2	97	0.6129	0.5824	0.5184	0.7379
Bosnia and Herzegovina	High EGDI	H2	94	0.6372	0.5353	0.6295	0.7468
Botswana	High EGDI	H1	115	0.5383	0.3647	0.5591	0.6911
Brazil	Very High EGDI	V1	54	0.7677	0.8706	0.6522	0.7803
Brunei Darussalam	High EGDI	HV	60	0.7389	0.6353	0.8209	0.7605
Bulgaria	Very High EGDI	V1	44	0.798	0.7706	0.7826	0.8408
Burkina Faso	Middle EGDI	M2	164	0.3558	0.4647	0.3117	0.2911
Burundi	Middle EGDI	M2	168	0.3227	0.3529	0.126	0.4891
Cabo Verde	High EGDI	H2	110	0.5604	0.5	0.5476	0.6337
Cambodia	High EGDI	H1	124	0.5113	0.4529	0.5466	0.5344