

## Towards innovative public organizations: analyzing the e-government strategy in Demark and Algeria

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### Abstract

The socio-economic society has undergone various unprecedented changes with the event of globalization, it marked by an enormous entry of technology into every aspect of everyday life; this has changed how people live, how companies deal with business and how governments satisfy citizen's needs, so the use of ICTs can connect all three parties. In fact, most countries adopt policies that emphasize the use of these information and communication technologies in order to achieve better Electronic Government, consequently to increase citizen adoption and usage of their online government services. This paper aims to highlight the e-Government strategy in both developing and developed countries, taking the e-Algeria and the Danish experience as case studies.

**Keywords:** society; e-government ; ICT ; e-Algeria ; Danish experience

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### Résumé

La société socio-économique a subi de divers changements sans précédent dus à la mondialisation qui a été marquée par une énorme entrée de technologie dans tous les aspects de la vie quotidienne. Cela a engendré des changements aux différents niveaux : au mode de vie des gens, au mode de gestion des affaires par les entreprises ainsi qu'à la façon dont les gouvernements répondent aux besoins des citoyens. Afin que l'utilisation des technologies de l'information et de la communication puisse connecter ces trois niveaux la plupart des pays adoptent des politiques qui mettent l'accent sur l'utilisation des TIC afin de parvenir à un meilleur gouvernement électronique et afin d'accroître l'adoption et l'utilisation par les citoyens de leurs services gouvernementaux en ligne. Cet article vise à mettre en évidence la stratégie d'e-gouvernement dans les pays en développement et développés, en prenant la e-Algérie et l'expérience danoise comme études de cas.

**Mots clés:** La société ; Le gouvernement électronique ; TIC ; la e-Algérie ; l'expérience danoise.

### ملخص

شهد المجتمع الاقتصادي في عصر العولمة تغيرات مختلفة لم يسبق لها مثيل، تميزت باقتحام كم هائل من التكنولوجيا في شتى جوانب الحياة اليومية؛ وقد أدى ذلك إلى إضفاء تغييرات معتبرة على أنماط عيش الأفراد، كيفية تنفيذ الشركات للمعاملات التجارية، والأهم من ذلك طريقة تلبية الحكومات لاحتياجات مواطنيها. وبالتالي فإن استخدام تكنولوجيا المعلومات والاتصالات يمكن أن يجمع بين هذه الأطراف الثلاثة في فينة واحدة. في الواقع، تنتهج معظم بلدان العالم على سياسات مستحدثة تؤكد على استخدام تقنيات المعلومات والاتصالات من أجل تحقيق حكومة إلكترونية أفضل، ومنه زيادة اعتماد المواطنين واستخراج مستنداتهم الحكومية والرسومية عبر الإنترنت. تهدف هذه الورقة البحثية إلى تسليط الضوء على استراتيجية الحكومة الإلكترونية في البلدان المتطورة والنامية، مع الأخذ في الاعتبار التجربة الإلكترونية الجزائرية والدانماركية كدراسة حالة.

**الكلمات المفتاحية:** المجتمع؛ الحكومة الإلكترونية؛ الجزائر الإلكترونية؛ التجربة الدانماركية.

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## I- Introduction :

In a time of globalization, society has undergone various developments that have affected several areas. These changes have made the individual more and more demanding even sophisticated, the governments also can no longer keep up with the ever-increasing pace. This is due to the progress of the Information and communication technologies, which have become such a powerful lever for economic and social development, it has changed the way citizens interact with each other and how they act as part of a government/citizen relationship. They are considered as the source of continuous innovation at the heart of the economy's growth because they create new opportunities for development.

In this context, several experiments have been adopted, notably the e-Algeria project, it aims to improve education, research and innovation capacities, to bring out ITC clusters, to increase the attractiveness of the country also to improve the daily lives of citizens by encouraging the diffusion and use of ITCs. Besides, the E-Denmark strategy that has a noteworthy success, it helps mostly to ensure that the public sector can seize the technological opportunities to create added value, growth and efficiency improvements while maintaining the confidence and trust of Danes in the digital society.

All of the above invite us to ask a problematic that we wish to respond through this article: what are the major axes of the e-Algerian and e-Danish strategies and What did these strategies provide for these both countries respectively?

## 1. Literature review

### 1.1. E-government in a knowledge society

The "knowledge society" is an expression used for the first time by the spiritual father of the information society Peter Drucker, in his famous book *"The Age of Discontinuity"* (Peter Drucker, 1969). This notion has developed and spread through globalization and particularly the accelerated introduction of ICT in most fields of the socio-economic society. Manuel Castells is one of the researchers who has the most developed this subject and is a recognized authority in this field. For him, the knowledge society: *"is a society where the conditions for knowledge creation and information processing have been largely modified by a technological revolution focused on the processing of information, the creation of knowledge and information technologies"* (Alain Ambrosi, Valérie Peugeot and Daniel Pimienta, 2005). In this perspective, a global report was prepared by the international organization UNESCO in 2005, entitled *"Towards Knowledge Societies"*. This report highlights that knowledge societies are a source of development for nations (UNESCO, 2005, p.27).

This type of society is characterized by a strong and progressive use of new technologies of information and communication, and their advent brought many new radical changes in the entire society. Nowadays, many authors speak about the world's entering to the Information Society (Sorin Dan Sandor, 2012, p.156) which is *"centered around the production, storage, retrieval and utilization of information, in which a 'network society' appears as transforming politics, economics, culture but also family and individuals"* (Castells, 2000, pp. 13-18).

Over the last 15 years, there has been a significant increase in the availability of ICTs in many developed (<https://link.springer.com/article/10.1057/s41265-016-0022-6>). Within a short period, digital government has evolved rapidly from basic uses of ICT as simple tools to facilitate highly structured administrative work to the integration of ICT throughout government operations (Olaniyi Evans, 2019, p.271) which aiming the efficiency of administration and improvement of public sector services. The increasing use of ICT by citizens has significantly influenced the way public services are provided and how citizen engagement processes are delivered (Liu and Yuan, 2015, p.140).

However, African countries still yet at the bottom of the podium in digital government adoption compared with developed countries. In order to adopt ICT successfully in these countries, many systematic analyses need to be carried out to understand the effect of ICT on public administration. Only when this relationship is clearly understood, innovative ICT can be impeccably integrated into African governance system (Olaniyi Evans, 2019, p.271), so that is what we call e-Government.

Definitions of e-Government abound in the literature, and the term itself is not universally used (SubhajitBasu 2011, P.110). Some definitions narrowly focus on using ICTs, particularly the Internet, to deliver more efficient and effective government services, while others view e-government as a broad-based effort to transform government and governance (Gerald Grant, Derek Chau, 2005, p.03)

Electronic Government (e-Government) is often announced as the new way forward for the public sector in both developed and developing countries. (Danish Dada 2006, P.01). This notion has been defined by many authors in different manners, according to (Shailendra C. Jain Palvia, Sushil S. Sharma, p.01) *“the e-Government is a generic term for web-based services from agencies of local, state and federal governments. In e-government, the government uses information technology and particularly the Internet to support government operations, engage citizens, and provide government services, the interaction may be in the form of obtaining information, filings, or making payments and a host of other activities via the World Wide Web”* (DjilaliIdoughi, DjeddiAbdelhakim, 2013, p.89).

It is clear that considerable confusion exists in explaining e-Government and e-governance (Shailendra C. Jain Palvia· Sushil S. Sharma, pp.03-04) and (Zhiyuan Fang, 2002, p.05):

- e-Government’s focus is on constituencies and stakeholders outside the organization, whether it is the government or public sector at the city, county, state, national, or international levels. , while e-governance focuses on administration and management within an organization, whether it is public or private, large or small;
- e-Governance concerns internally-focused utilization of information and internet technologies to manage organizational resources and administer policies and procedures both for the public sector or private sector via Intranet. E-governance deals with the online activities of government employees;
- e-Governance is beyond the scope of e-government. While e-government is defined as a mere delivery of government services and information to the public using electronic means, e-Governance allows citizen direct participation of constituents in political activities going beyond government and includes e-Democracy, e-Voting, and participating political activity online. So, most broadly, concept of e-Governance.

E-Government can bring significant benefits to both Government, citizens, business, employees and other organizations – nonprofit, political and social ones-, (Donna Evans, David C Yen, 2006, pp.209-210) and (Zhiyuan Fang, 2002, p.07) have classified E-Government into 8 categories, are as follows:

*Government-to-Citizen (G2C)*: Provide the momentum to put public services online, in particular through the electronic service delivery for offering information and communications;

*Citizen-to-Government (C2G)*: Provide the momentum to put public services online, in particular through the electronic service delivery for exchange of information and communication;

*Government to business (G2B)*: This category of delivery focuses on the ability to reduce cost and gather better data to analyze the decision making;

*Business -to-Government (B2G)*: Actively drive E-transactions initiatives and carry out government procurement tenders through electronic means for sale of goods and services;

*Government to government (G2G)*: strives to improve the efficiency of delivery when transacting information within itself or with other governments;

*Government-to-Employee (G2E)*: facilitate the management of the civil service and internal communication to make e-Career applications and processing system paperless in e-Office;

*Government-to-Nonprofit (G2N)*: Government provides information and communication to nonprofit organizations,

*Intra-government (IEE)*: focuses on delivery systems within the e-Government system.

## **II– Methods and Materials :**

We applied a descriptive analytical method due to the suitability of this approach with our study, while we tried to highlight e-government concept by interrogating its details in literature review, then we focus on the major axes of the e-government strategies of Denmark and citing some statistical facts about Danish experience in E-government in descriptive part, after that we deduced an analytical explanation (The study's point of view) as analytical part of study, that analytical part conducted us to remarks and recommendation for the Algerian case in e-government.

## **III- Results and discussion :**

Successful e-Government can increase citizen satisfaction, improve government efficiency, and reduce transaction costs (Donna Evansa, David C Yen, 2006, p.228), it has the potential to improve government transparency, responsiveness, and accountability (France Bélanger, Lemuria Carter, 2008, p165), but its implementation of is affected by many factors. Several studies address the issues inherent to risks and failures of e-Governance projects , and confirm that there are many hinders to successful e-Government implementation, including financial, planning, political objectives, and lack of citizen acceptance and/or interest (Donna Evansa, David C Yen, 2006, p.211).

Heeks admit that plenty of e-Governance projects are begun with high expectations. But at the same time many of them turn out to be failures, so he identifies the extent of gap between “*the current realities*” and “*the design of the e-Government project*”, called “*the design-reality gap*” as the factor on which the success or failure of the projects depend on (Alok Kumar Mittal, Pradeep Kumar Kalampukatt, 2010, p.14).

Consequently, in order to examine the risk of implementing e-Governance solutions, some factors must be taken into account (SubhajitBasu, 2011, p.112), such as: the political stability, an adequate legal framework, the level of trust in government, the economic structure (education, agriculture, industry or service)...etc.

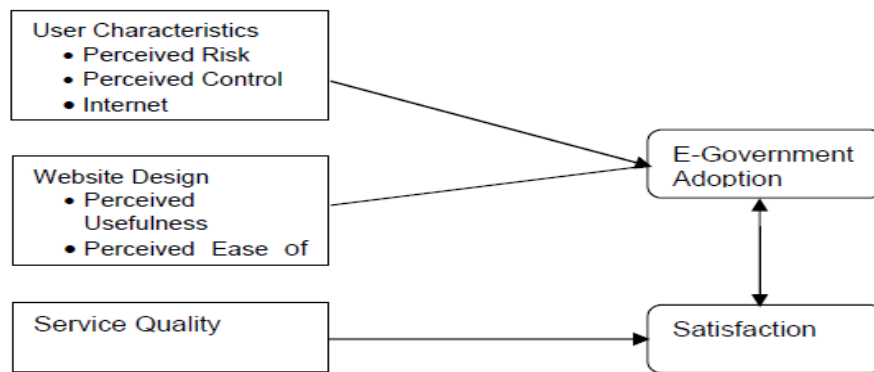
According to (France Bélanger, Lemuria Carter, 2008, p.165), many citizens may be reluctant to adopt e-government services due to a lack of trust in the security of online transactions and concerns regarding the use of information submitted electronically. Therefore, a research reported by the same authors shows that a lack of trust hinders citizen adoption of e-government services, the latter will only be adopted if citizens

deem them trustworthy, so we can say that citizen confidence in government is imperative to the adoption of e-government.

Another point is that e-Government could tackle against corruption's high level. In that sense, a survey was conducted by (Thomas Barnebeck Andersen, 2009, p.209) where the results, in sum, imply that implementing e-government significantly reduces corruption, even after controlling for any propensity for corrupt governments to be more or less aggressive in adopting e-government initiatives. Moreover, as indicated by (Global corruption report 2003, p.30) "*the e-government offers a partial solution to the multifaceted problem of corruption. It reduces discretion, thereby curbing some opportunities for arbitrary action. It increases chances of exposure by maintaining detailed data on transactions, making it possible to track and link the corrupt with their wrongful acts*".

In addition, (Vinod Kumar et al, 2007) propose a conceptual model of successful e-Government adoption which enumerating some factors that places users as the focal point for this strategy.

**Figure N°01:** Conceptual model of successful e-Government adoption



**Source:** Vinod Kumar et al, (2007), "*Factors for Successful e-Government Adoption: a Conceptual Framework*", Electronic Journal of e-Government Volume 5 Issue 1, p.68.

The results exhibit that success of e-Government efforts depends on how the citizens make use of them (Vinod Kumar et al, 2007, p.73):

- ✓ User characteristics (financial and performance risk as well as data security and privacy) and website design directly influence e-Government adoption;
- ✓ Perceived control is also important over the process, consumer are unaware how their personal information is being used, and the extent of Internet experience;
- ✓ Website design variables, based on the technology acceptance model, are perceived usefulness and perceived ease of use, could significantly increase the adoption rate;
- ✓ Service quality has a direct bearing on user satisfaction, which in turns influences the adoption of e-Government;

- ✓ The use of appropriate measures to gauge e-Government service quality for a citizen centric model would require fulfilling user-defined expectations of service quality.

The e-Government concept is limited in four ways (Mete Yildiz, 2007, pp.654-656). The first limitation of e-government is that there is still no standard definition of the concept. In other words, it is difficult to define what exactly e-government is. Second, e-government is one of those concepts that mean a lot of different things to a lot of different groups. Third, e-government contains much hype efforts/ literature similarly to the concepts of “knowledge management” or “management by objectives”. Finally, the necessity of substantial change to meet the criteria for a government technology project to be titled as an e-government project.

### 3. ANALYSIS

One of the success stories of e-Government in developed countries is ‘eEurope’ (SubhajitBasu, 2004, p.114). One of the huge multiple benefits of e-Government in developed countries is cost reduction in the transfer of information and online transactions (Dada Danish, 2006, p.06). In those countries, it is not difficult to imagine a situation in which all interactions with government could be done through speedy onecounter 24 hours a day/ 7 days a week. While it is not the case for developing countries, it is going to be quite effortful to attain the same situation of efficiency and flexibility (SubhajitBasu, 2011, p.110). This can be explained by so many reasons, among them (Christian Wagner, Karen Cheung, Fion Lee, Rachael Ip, 2003, pp.14-16) and (Danish Dada, 2006, pp.06-07) note:

- Many developing countries do not have the infrastructure necessary to deploy e- government services throughout their territory;
- The cost of implementing and maintaining ICT systems is definitely high for a developing countries;
- In a developing country, the gap between educated and under-educated people can be large;
- Developing countries often have a poor IT infrastructure;
- Numerous people in developing countries do not have access to information and communications technology, even if the infrastructure is available.

Therefore, according to (SubhajitBasu 2004, p.115) the e-Government strategy demonstrates opportunities for developing countries to enable the increase their competitiveness. The continuing maturity of technology and expectation of citizens about provision of public services online constitute the main drivers for e-Government in developing countries (Sara Abdallah, Ip-Shing Fan, 2012, p.159).

Our purpose in this paper is to study the implementation of e-Government in both developing and developed countries, by taking one strategy among both of them: e-Algeria and e-Government in Denmark respectively

The e-Algeria is a part of the vision of the emergence of the Algerian knowledge society, by encouraging a progressive and orderly use of ICTs, while Denmark seems to concentrate on decreasing operational expenses via e-Government initiatives (Shareef M. Shareef, Hamid Jahankhani, Mohammad Dastbaz, 2012, p.148).

In 2003, according to E-government Readiness index<sup>1</sup>, Algeria was ranked at 4 out of all the African countries with an average index of 0.370 (World Public Sector Report,

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<sup>1</sup> Is an internationally agreed-upon composite index that measures the capacity of governments to develop and implement e-government services. The indicator consists of three sub-indices: the web measure index, the telecommunication infrastructure

2003, p.158) and at 91 at the international scale -out of 173 countries- (World Public Sector Report, 2003, p.187), this is parallel to the launching of the e-Algeria strategy. This means that the country was more or less ready to adopt this strategy.

(The e-Government survey, 2014, p.28) indicate that the progress related the e-Government in Africa remains relatively slow and uneven. Six countries (Tunisia, Mauritius, Egypt, Seychelles, Morocco and South Africa) have e-Government Development Index (EGDI) values above the world average of 0.4712, placing them among the top 50 per cent of the world and the top 5 in Africa, these countries had a progress (3-38 places) comparing to 2012.

On the global scale, Algeria was ranked 136<sup>th</sup> with an average index 0.31, it figured in the 20 of African countries (16<sup>th</sup>), but this position has declined with 4 places comparing to 2012 (12<sup>th</sup>).

In 2016, Algeria was ranked 150<sup>th</sup> based on the (The e-Government survey, 2016, p.147) with average of 0.299, and 24<sup>th</sup> on the continental scale (The e-Government survey, 2016, p.160). While in 2018, it made a remarkable progress (went up with 20 places), it was ranked 130<sup>th</sup> (0.422) according to the (E-Government Survey, 2018, p. 221).

Talking about one of e-Government success story in Europe, which became a leader in digital public administration, communication and e-services. The Denmark figured among the 25 World e-government leaders (ranked 16<sup>th</sup>) with very High EGDI (0.816) in 2014 (E-Government Survey, 2014, p.15), while on the continental scale, it was ranked at 14<sup>th</sup> (declined by 12 places comparing to 2012) (E-Government Survey, 2014, p.31). In 2016, Denmark was one of World e-government leaders with very high E-Government Development Index (EGDI) levels occupying the 9<sup>th</sup> place and the 5<sup>th</sup> in Europe (E-Government Survey, 2016, p.116). Denmark continue to advance towards higher levels of e-government to become a leader at an international and the continental level (E-Government Survey, 2018, p.140).

**3.1.The e-Algeria project 2013** (The report of: e-Commison, (2008), synthesis e-Algeria, Embassy of Algeria in Moscow: <http://www.algerianembassy.ru/pdf/e-algerie2013.pdf>)

From the analysis of the information society and the state of ITC in Algeria in general, it appears that Algeria still lagging behind and ranks among the middle-scoring countries. To improve this conjuncture, the country would benefit from implementing a strategy with clearly defined qualitative and quantitative objectives.

This strategy, launched in 2009, is a part of the vision of the emergence of the Algerian knowledge society, taking into account the deep and rapid changes that the world is experiencing. This strategy, which calls for a coherent and vigorous action plan, aims at strengthening the performance of the national economy, businesses and administration. It also aims to improve education, research and innovation capacities, to bring out ICT clusters, to increase the attractiveness of the country and notably to improve the daily lives of citizens by encouraging the diffusion and use of ICTs.

The thirteen axes of the E-Algeria Strategy are, knowing that their main objective is to raise the awareness of the importance and the role of ICTs in enhancing the citizen's life quality and achieving the socio-economic development for the country:

- Accelerating the use of ICT in public administration;

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index and the human capital index (<https://www.oecd-ilibrary.org/docserver/9789264061651-33-en.pdf?expires=1587387840&id=id&accname=guest&checksum=C3AFCE472C41D293A309D2E43F35216E>consulted on 20/04/2020)

- Accelerating the use of ICT in companies;
- Development of mechanisms and incentives enabling citizen's access to ICT equipment and networks;
- Impulse of the development of the digital economy;

Strengthening the telecommunications infrastructure at high and very high speed;

- Human skills development;
- Strengthening research-development and innovation;
- Upgrading the national legal framework;
- Information et communication;
- Valorization of international cooperation;
- Evaluation and monitoring mechanisms;
- Organizational measures;
- Financial means and planning.

**Implementation of the project:** The e-Algeria strategy has allowed to reinvent; more or less; the traditional administrative process so hoped for, thus to reduce the costs of services and especially to eradicate the frequent issues inherent to corruption and bureaucracy. For instance, the Ministry of Higher Education and Scientific Research, has been able to save 70 million AD per year in paper documents thanks to the computerization of student enrollments (LounesHouda, 2018, p.502).

As it is mentioned in Table N°01, 90% of planned actions of the e-Algeria project are concerning the modernization of the public administration, observing the table, we can notice that there is a significant gap between the planned actions and the achieved ones. In this regard, (LounesHouda, 2018, pp.504-505) has mentioned some obstacles, which have slowed down the global achievement of the e-Algeria project:

- The crisis that the country is going through and the exhaustion of resources;
- The scarcity of human resources specialized in ICT because of the flight of skills that characterized our country during the 90s and 2000s;
- Bureaucracy and the heaviness of the enforcement procedures;
- The high cost of internet access

In order to optimize the Algerian e-Government, several institutional websites were made available on-line, so to enable citizens to have access various information; interact with the administration and to perform some procedures online. The tables N°02 and N°3 demonstrate the progress of these sites during 2015-2016.

Through it, we can observe that the number of invoice paid online has considerably increased, with a percentage of 175%, it marks also a modest rise in the number of internet reloads via fixed telephony with a percentage of 0.92%. These increases could be essentially explained by several reasons, among:

- The citizen-user gives more confidence to the online payment system (development of digital trust: Official journal of the Algerian republic n° 59, 2017, p.11) ;
- The government's efforts to improve the field of ICT especially in the public administration ;



- The growth of operating companies on this field ;
- Increasing the export volume of ICT goods through the state's policies which encouraging the companies to export and to create the non-hydrocarbon sources of finance.

### 3.2- E-government: The Danish strategy

On July 19<sup>th</sup>, 2018, the UN released its 2018 e-Government Survey and for the first time ever Denmark is –after a very hard and strict work- at the top of the list of e-government countries that are adopting information and communication technologies. When setting its benchmark, the UN placed particular emphasis on the fact that Denmark has succeeded in striking a balance between efficient e-government solutions and helping its citizens to make operations with public authorities effectively and efficiently in order to follow the principal of globalizing technologies on a hand and to make life easier and less complicated on the other. The UN has released its e-government benchmark biennially since 2001, and in the 2018 ranking of e-government efforts among the 193 United Nation member states, Denmark is at the top of the list for the first time.

Moreover, the following table will shows us the classification of the top leading countries in e-government.

**Table .4.**top first leading countries in e-government in the world

Country	Region	Subregion	EDGI	Rank
 Denmark	Europe	Northern Europe	0.9150	1
 Australia	Oceania	Australia and New Zealand	0.9053	2
 Republic of Korea	Asia	Eastern Asia	0.9010	3
 United Kingdom	Europe	Northern Europe	0.8999	4
 Sweden	Europe	Northern Europe	0.8882	5
 Finland	Europe	Northern Europe	0.8815	6
 Singapore	Asia	South-Eastern Asia	0.8812	7
 New Zealand	Oceania	Australia and New Zealand	0.8806	8
 France	Europe	Western Europe	0.8790	9
 Japan	Asia	Eastern Asia	0.8783	10
 United States of America	Americas	North America	0.8769	11
 Germany	Europe	Western Europe	0.8765	12
 Netherlands	Europe	Western Europe	0.8757	13
 Norway	Europe	Northern Europe	0.8557	14
 Switzerland	Europe	Western Europe	0.8520	15

**Source:** Sustainable development goals, press release, 2018, p01.

The last 2018's ranking concerning e-government development; Denmark, Australia, and Republic of Korea were on top of a group of 40 well performing countries. These lasts have scored very high and proudly jumped to first places, however ,using the E-Government Development Index—EGDI , the use of these countries' and their application of information and communication technologies was calculated to measure their pure involving. In addition, that made them able to facilitate procedures and paper work for citizens and improved managerial skills and competences in the public sector. The Index takes into consideration the scope and quality of online services, status of telecommunication infrastructure.

**Table.5.** the main axes of the E-Denmark Strategy

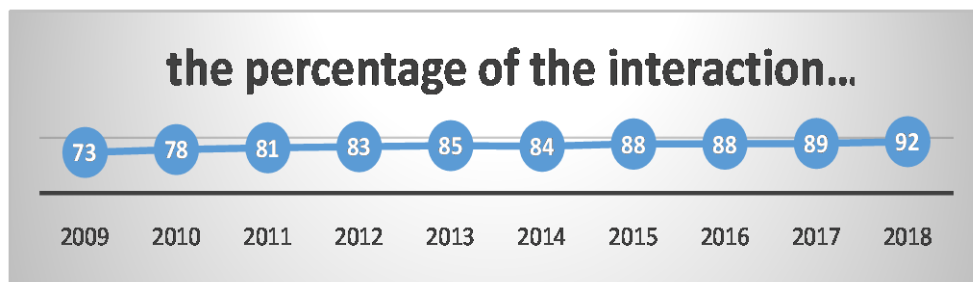
The axe	Description and realization zone	Objectives
<b>New Digital Strategy 2016-2020</b>	In order to achieve the goal of the digital future Denmark, a new digital strategy was designed by emphasizing on the following principles: -encouraging the public sector that can absorb the high technological opportunities. -creating added value by contributing to the economic growth while maintaining the confidence and trust of Danes in a digital society atmosphere.	Aiming for a more digital Denmark especially the new public sector that relies on the central, regional and local governments. However the new joint strategy sets some realizable goals for the coming years: -Improving management process and aspects in the public sector. -Achieving Coordination and order across authorities. -Efficient and cohesive public services by using new digital and high-quality welfare solutions -Putting the citizen's data security and confidentiality in the top of the e-government priorities.
<b>Cutting red tape in Denmark</b>	Technology is an opportunity that was exploited by Denmark to abolish the red tape phenomenon and tremendously fight it especially in administrations. However, this was realized indeed by closely intertwining this remarkable effort with the use of high-level technologies of communication and information in public sector, adding to these lasts the renovation of new legislative regulations.	Cutting red tape equals technology; this was the famous slogan of the modernization program that was launched since 1983 to: -fully realize the potential for public sector efficiency. - Technology for efficiency improvements and better service for citizens. -abrogating and annulling the high density of paper work and hard bureaucratic difficulties. - integrating social progress plans or so-called "burden hunting <sup>1</sup> " to facilitate administrative procedures for Danes in general especially businessmen and families having social problems.
<b>Strategy for ICT management in central government</b>	The Danish Minister for Public Sector Innovation has presented a strong ICT foundation Strategy for the process of ICT managing in central government. This last has given new dimensions to the managerial concept and is supposed to impressively improve the method of laboring of central government authorities' by introducing ICTs.	The development of welfare of the Danish state is coupled with the remaining of the ICT's portfolio of central government as a solid foundation.in order to: -ensure that the ICT systems are being administered in a reasonable manner to accomplish the needed managerial success. - manage digital projects securely and properly to provide a clean secure data protection for citizens.
<b>Denmark's National Strategy for Artificial Intelligence</b>	The national strategy of Artificial intelligence was considered as a higher priority by whether the Danish government or decision makers in administrative and the business field, to benefit from it as individuals, businesses or the social community as a whole. However, artificial intelligence provides profitable opportunities for boosting growth, affluence, richness and world-class public service.	The use of artificial intelligence is supposed to help the Danish government in reaching the following goals: -creating a framework for societies, academic and non-academic researchers and public authorities that gives them the chance to profiteer the potential of artificial intelligence with a high level of responsibility and order. -providing for nation of Denmark a great ethical and human-centered basis for artificial intelligence

**Source:** authors, based on: <https://e2n.digst.dk/policy-and-strategy/denmark-s-national-strategy-for-artificial-intelligence> (consulted on 20/04/2019).

### 3.2.1. Statistical facts about the Danish experience in E-government:

In order to clarify our vision we tried to bring some facts and statistics concerning the adoption of e-government in Denmark, starting with 2009 until 2018. And that's why we'll try to examine the changing and the fluctuations during the years, underlining the main efforts and strategies that were established by the Danish government to reach the goal of a wholly digitalized e-government by applying the information and communication technologies in the public sector. We will be dealing with the following four main elements:

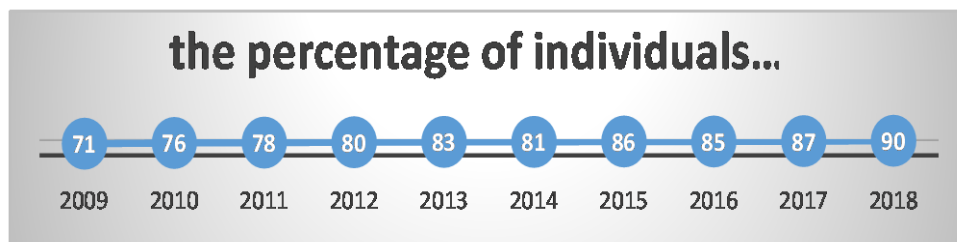
**Figure n01**



**Source:** authors, based on <http://appsso.eurostat.ec.europa.eu> , consulted on 15/05/2019.

The figure above explains how the Danish citizen has improved his interaction with public authorities from 2009 until 2018, actually, it is an acceptable percentage from the beginning and it has increased from 73% to reach the 92%. Moreover, that was a result for the good service delivery offered by public authorities, which has influenced the interaction between the two sides.

**Figure.2.**

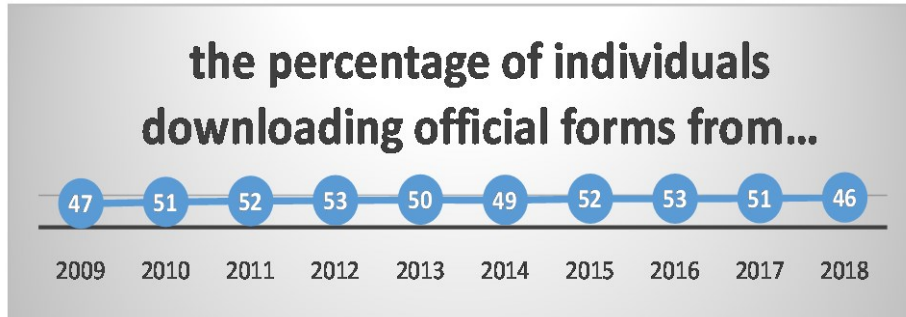


**Source:** authors, based on <http://appsso.eurostat.ec.europa.eu> , consulted on 15/05/2019

The previous graph shows that individual information in Denmark are obtained from authorities using internet , and that translates its self the implication of internet as a sophistic intermediary of communication between government and people. We can say that significant results were obtained, a 90% of Danishes in 2018 use internet to obtain their official social and civil informations. A remarkable progressive increase of 19%

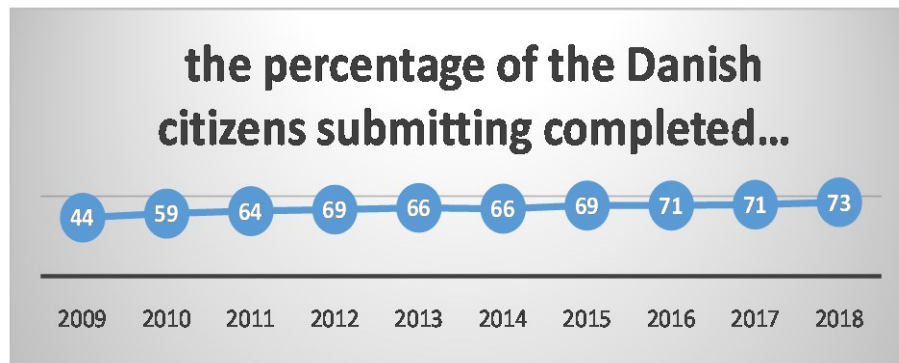
also has been captured since the adoption of serious e-strategic efforts and decisions since 2009.

Figure .3.



Source: authors, based on <http://appsso.eurostat.ec.europa.eu> , consulted on 15/05/2019.

Figure.4.



Source: authors, based on <http://appsso.eurostat.ec.europa.eu> , consulted on 15/05/2019.

The figure 3 and 4 shows the increasing of the use of internet in downloading and submitting forms from public authorities using e-portals and websites.

Nowadays, official forms are being wholly downloaded via internet and e-portals that provides harmless data saving and delivering, a focus on secure e-mail between authorities, joint government standards and portals. As an instance, we have according to( Morten Meyerhoff Nielsen and Mika Yasuoka, 2014, p04): eFaktura (eInvoice), NemKonto (single bank account for government use), Virk.dk (business portal), Sundhed.dk (health portal), digital document and archive systems and so forth.

### 3.2.2. Analytical Explanation: (The study's point of view)

The graphs above gathers different statistical facts and measurements about the use of ICTs and the result of the latest e-Government Benchmark study, which monitors the

development of e-Government in Denmark. Furthermore, these recent years Denmark has tried to improve its electronic service delivery, by adopting various strategies (Morten Meyerhoff Nielsen and Mika Yasuoka, 2014, p04) that aim to achieve the total local electronic efficiency, so we can say that the Danish e-success is a result of great efforts during the years:

**-2001-2003: Digital collaboration:** it aims to allow individual to interact by e-mails with the public sector and adopt digital channels of communication, the most important achievement of this strategy was the digital signature.

**-2004-2006: Internal digitalization and efficient payments:** there was a great focus on the data security, and the creation of e-portals like eFaktura (eInvoice), Virk.dk (business portal), Sundhed.dk (health portal), digital document and archive.

**-2007-2010: Shared infrastructure and one point of access:** the legal obligation for using shared infrastructure, augmenting the cooperation with public authorities (see figure 01), e-service delivery value added services and efficiency. Examples: Borger.dk (the citizen portal), NemID (digital signature), NemLog-in (single, sign-on), NemSMS (SMS service component).

**-2011-2015: The path to future welfare:** at this stage of the Denmark digitization, the focus of the nation was on making profit and benefit from this strategy. Examples: integrating the ICT's use in business and Data distribution like the burden hunting (which is a digitized methodology used in the field of business to simplify procedures by creating regulation that is more suitable for business internal processes).

So this helped to encourage and facilitate investment in ITs and approximated the logic of e-government and e-public procedures to the brain of the Danish citizen especially when they proved and made sure that it could be a profit creator and booster, so it could touch several segments in the society even business men.

**-2016-2020:** (see table N°02).

### **3.2.3. Concluding remarks and recommendation for the Algerian case in e-government**

Algeria ranked 130 in the world and was an insufficient ranking comparing to the rest 193 countries in the whole world but it is a little bit fine and expectable comparing to Africa. According to our analytical study.

**Table N°VI:** the ranking of Algeria comparing to other countries in e-government.

Rank	Country	EGDI Level	EGDI	Telecomm.		
				Online Service Component	Infrastructure Component	Human Capital Component
177	Afghanistan	Middle EGDI	0.2585	0.3056	0.1138	0.3562
74	Albania	High EGDI	0.6519	0.7361	0.4318	0.7877
130	Algeria	Middle EGDI	0.4227	0.2153	0.3889	0.6640
62	Andorra	High EGDI	0.6857	0.6042	0.7220	0.7309
155	Angola	Middle EGDI	0.3376	0.4097	0.0972	0.5060
90	Antigua and Barbuda	High EGDI	0.5906	0.4583	0.5617	0.7518
43	Argentina	High EGDI	0.7335	0.7500	0.5927	0.8579
87	Armenia	High EGDI	0.5944	0.5625	0.4660	0.7547
2	Australia	Very High EGDI	0.9053	0.9722	0.7436	1.0000

**Source:** United Nations e-government survey, p290 (appendix).

**Table N° IV:** the ranking of Algeria by region (Africa)**Table 4.** E-Government Development Index (EGDI) by region - AFRICA

Rank	Country	Sub-Region	EGDI	Telecomm.		
				Online Service Component	Infrastructure Component	Human Capital Component
130	Algeria	Northern Africa	0.4227	0.2153	0.3889	0.6640
155	Angola	Middle Africa	0.3376	0.4097	0.0972	0.5060
159	Benin	Western Africa	0.3264	0.4722	0.1418	0.3653
127	Botswana	Southern Africa	0.4253	0.2083	0.3982	0.6694
165	Burkina Faso	Western Africa	0.3016	0.5347	0.1603	0.2097
166	Burundi	Eastern Africa	0.2985	0.3056	0.0786	0.5113
136	Cameroon	Middle Africa	0.3997	0.4583	0.1790	0.5618
112	Cabo Verde	Western Africa	0.4980	0.4861	0.3926	0.6152
188	Central African Republic	Middle Africa	0.1584	0.2083	0.0322	0.2347
190	Chad	Middle Africa	0.1257	0.1458	0.0669	0.1644
182	Comoros	Eastern Africa	0.2336	0.0972	0.0871	0.5166
164	Congo	Middle Africa	0.3024	0.1667	0.1889	0.5515
172	Côte d'Ivoire	Western Africa	0.2776	0.2222	0.2748	0.3357
176	Democratic Republic of the Congo	Middle Africa	0.2612	0.2083	0.0645	0.5108

**Source:** United Nations e-government survey, p295 (appendix).

According to our analytical study and the tables above, we tried to come out with a bunch of barriers and reasons that prohibited Algeria to reach advanced ranks in e-government:

- Problem of control and ability to adopt information and communication technologies in public administrations; however, in the majority of cases it is highly difficult to achieve the wholly excepted and non-resisted idea by



citizens in a hand and by the group of employees in the other hand. As an instance: the lack of time, financial resources, and general awareness.

- The problem of inadequate telecommunication infrastructures.
- The way of thinking, historical, and social habits of the Algerian citizen, which is composed by several, age layer and several intellectual layers.
- Other social, cultural, Political and regulatory obstacles.
- The lack of awareness by the majority of the social community's individuals.

#### IV- Conclusion:

We tried to underline in our study the application of information and communication technologies in public organizations. We treated the subject at the beginning by a theoretical and conceptualization base about the public administrations that exist in Algeria, and how they are classified in this last. Then we also emphasized on the concept of e-government, which is summarized by the adoption of ICT by the public authorities and considered after all as more than just a government website on the Internet" (SubhajitBasu, 2011, p.110) .

The second part of the study was a kind of a description of the e-government in Algeria especially the strategies and tools used to achieve the goals of the digitization of the whole operations in the public service, besides the analysis of the Denmark experience in the e-government, which was, classified the first in 2018.

We actually attempted to answer the research question that were established at the beginning of our research paper through the theoretical debate , the statistical facts plus a large analysis of the Danish experience and its most important success factors and work methods. Then we concluded our research paper by underlining the main problems of the e-government in Algeria and gave some governmental recommendations and remarks.

#### - Appendices :

**Table N°01: the implementation rate of the e-Algeria**

Number of planned actions	Major axis (objectives)	Completed actions	%
868	Accelerating the use of ICT in public administration	242	28%
13	Accelerating the use of ICT in companies	2	15%
14	Development of mechanisms and incentives measures for citizens to have access to ICT equipment and networks.	3	21%
26	Impulse of the digital economy development	10	38%

**Source:** Adapted by us basing on Lounes Houda, "*The e-administration in Algeria, between plan and achievements*", 2018, p.503 according Ali Kahlane, « *Etat de réalisation e-Algérie au 31 mars 2018* ».

**Table N°02: Websites and online services**

Indicators	2015	2016
Number of sites web.dz	7148	9162
Number of institutional websites (ministries and related organisms)	587	587
Number of available online procedures	29	30

Source: <https://www.mpttn.gov.dz/en/content/ict-indicators> consulted on 05/09/2019

**Table N°3: the use of online services and multimedia services**

Indicators	2017	2018
Number of internet reloads via fixed telephony	19 248 561	19 427 122
Number of invoice consultation online	/	946 924
Number of invoice paid online	16 545	45 509

Source: report of the Ministry of Post, Telecommunications, Technology and Digital, General Direction of Digital Economy, p.11: <https://www.mpttn.gov.dz/sites/default/files/Fr-Rapport-TIC%20.pdf>

## Referrals and References:

### 1. Books :

- Translated according to : Alain Ambrosi, Valérie Peugeot and Daniel Pimienta , (2005), « *Enjeux de mots : regards multiculturels sur les sociétés de l'information* », [C & F Éditions](#).

### 2. Journal article :

- Alok Kumar Mittal, Pradeep Kumar Kalampukatt, (2010), “*Partnership challenges in achieving common goals – A study of Public Private Partnership in e-Governance projects*”, Master Program in Strategic Project Management (European), Umeå School of Business, Sweden, p.14
- Christian Wagner, Karen Cheung, Fion Lee, Rachael Ip, (2003), “*Enhancing E-government in Developing Countries: Managing Knowledge through Virtual Communities*”, The Electronic Journal on Information Systems in Developing Countries, 14, 4, pp.14-16
- Djilali IDOUGHI, Djeddi ABDELHAKIM, (2013), “*Towards an Algerian e-Government strategy and achievements*”, international journal of e-business and e-government studies Vol 5, No 1, p.89



- Donna Evans, David C. Yen, (2006), “*E-Government: Evolving relationship of citizens and government, domestic, and international development*”, Government Information Quarterly 23, pp.209-228
- France Bélanger, Lemuria Carter, (2008), “*Trust and risk in e-government adoption*”, Journal of Strategic Information Systems 17, pp.165-174
- Gerald Grant, Derek Chau, (2005), “*Developing a Generic Framework for E-Government*”, Journal of Global Information Management, 13(1), p.03
- Mete Yildiz (2007), “*E-government research: Reviewing the literature, limitations, and ways forward*”, Government Information Quarterly 24, pp.654-656
- Olaniyi Evans, (2019), “*Digital government; ICT and public sector management in Africa*”, chapter 4 in Financial legal and IT aspects of management, p.271
- Peter Drucker, (1969), “*The Age of Discontinuity. Guidelines to Our Changing Society*”, New York, Harper and Row.
- Sara Abdallah, Ip-Shing Fan, 2012, Framework for e-government assessment in developing countries: case study from Sudan”, *Electronic Government, An International Journal*, Vol. 9, No. 2, p.159
- Shailendra C. Jain Palvia, Sushil S. Sharma, “*E-Government and E-Governance: Definitions/Domain Framework and Status around the World*”, Foundations of E-government, pp.01-04
- Shareef M. Shareef, Hamid Jahankhani, Mohammad Dastbaz, (2012), “*E-Government stage model: Based on citizen-centric approach in regional government in developing countries*”, International Journal of Electronic Commerce Studies Vol.3, No.1, p.148
- Subhajit Basu (2004): E-government and developing countries: an overview, International Review of Law, Computers & Technology, 18:1, pp.110-112
- Thomas Barnebeck Andersen, (2009), “*E-Government as an anti-corruption strategy*”, Information Economics and Policy 21, p.209
- Vinod Kumar, Bhasker Mukerji, Irfan Butt, Ajax Persaud, (2007), “*Factors for Successful e-Government Adoption: a Conceptual Framework*”, Electronic Journal of e-Government Volume 5 Issue 1, pp.68-73
- Zhiyuan Fang, (2002), “*E-Government in Digital Era: Concept, Practice, and Development*”, International Journal of The Computer, The Internet and Management, Vol. 10, No.2, pp.05-07

### 3. Reports:

- The report of Global corruption report (2003), p.30: [https://www.transparency.org/whatwedo/publication/global\\_corruption\\_report\\_2003\\_access\\_to\\_information](https://www.transparency.org/whatwedo/publication/global_corruption_report_2003_access_to_information) consulted on 17/04/2020
- World Public Sector Report, 2003, pp.158-187: <https://publicadministration.un.org/publications/content/PDFs/E-Library%20Archives/World%20Public%20Sector%20Report%20series/World%20Public%20Sector%20Report.2003.pdf> consulted on 18/04/2020

- The report of: UNESCO, (2005), "*Towards Knowledge Societies*", p.27: <http://unesdoc.unesco.org/images/0014/001419/141907f.pdf> translated and consulted on 02/09/2018
  - The report of : e-Commision , (2008), synthesis e-Algeria, Embassy of Algeria in Moscow: <http://www.algerianembassy.ru/pdf/e-algerie2013.pdf>
  - The e-Government survey, 2014: <https://publicadministration.un.org/publications/content/PDFs/UN%20E-Government%20Survey%202014.pdf> consulted on 20/04/2020
  - The e-Government survey, 2016: <https://www.egovernment.ch/files/3414/7031/5638/UN-eGov-Survey-2016.pdf> consulted on 20/04/2020
  - E-Government Survey, 2018: [https://www.unescap.org/sites/default/files/E-Government%20Survey%202018\\_FINAL.pdf](https://www.unescap.org/sites/default/files/E-Government%20Survey%202018_FINAL.pdf) consulted on 20/04/2020
  - The report of Ministry of Post, Telecommunications, Technology and Digital, General Direction of Digital Economy, p.11: <https://www.mpttn.gov.dz/sites/default/files/Fr-Rapport-TIC%20.pdf>
  - The European Union, (2015), Article 2 of Commission Directive 80/723 / EEC of 25 June 1980 on the transparency of financial relations between Member States and public enterprises
- 4. Internet websites:**
- [https://www.academia.edu/33458693/Cours\\_de\\_management\\_des\\_entreprises](https://www.academia.edu/33458693/Cours_de_management_des_entreprises) consulted on 19/05/2019
  - <https://www.mpttn.gov.dz/en/content/ict-indicators> consulted on 05/09/2019
  - Ministry of Post, Telecommunications, Technologies and Digitalization <https://www.mpttn.gov.dz/en/content/e-gov> consulted on 20/05/2019
  - <https://link.springer.com/article/10.1057/s41265-016-0022-6> consulted on 20/05/2019
  - <https://www.oecd-ilibrary.org/docserver/9789264061651-33-en.pdf?expires=1587387840&id=id&accname=guest&checksum=C3AFCE472C41D293A309D2E43F35216E> consulted on 20/04/2020
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