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The Role Of E-governance In Achieving Cloud Computing Security In Algerian Government Policy.

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دور الحوكمة الإلكترونية في تحقيق أمن الحوسبة السحابية في السياسة الحكومية الجزائرية.

الباحثة: سهام قواسمية. الباحثة: أسماء قواسمية

Abstract

the technology that policymakers are supposed to make use of, is one of the difficulties facing governments in formulating ICT policies, at the national level is often unfamiliar to them, or that their knowledge of, and the issues they address are modest. As a result, many decision-makers are throwing themselves away from ICT policies.

However, leaving the issue of ICT policy formulation to technologists alone is not the most appropriate solution. Technologists, including computer programmers and engineers, may often not recognize the dimensions and implications of a particular policy on the technologies they develop and use. ESCWA has launched the "ICT Academy for Development for Government Sector Leaders in the Arab Region" and developed a series of training modules aimed at:

First: national government decision makers and local administrations responsible for ICT policies;

Second: Government cadres responsible for the development and implementation of ICT-based applications;

Third: Public sector managers need to employ ICT tools in project management.

The United Nations Educational, Scientific and Cultural Organization (UNESCO) has defined the following definition of governance and e-governance: Governance is the exercise of political, economic and administrative power to manage state issues, including the right of citizens to express their interests And exercise their legal rights and obligations. E-governance

can be understood as the exercise of governance through electronic means to achieve efficiency, speed and transparency in the process of communicating information to the public and other government agencies, and for the government to perform its administrative functions. The European Council cited the following definition of e-governance: "The use of e-technologies in the following three areas:

The relationship between power and civil society; the functioning of the Authority at all stages of the democratic process (e-democracy); and the provision of public services (e-services).

Of course, to achieve all this, the state must resort to cloud computing systems, a technology that relies on transferring the processing and storage space of the computer to the so-called cloud, servers that are accessed via the Internet. To transform programs from products to services. Users have access to them online without having to have the knowledge, experience and control of hardware.

But the issue of security of e-cloud information is controversial. Some see information as safe only when managed in an internal network; others believe that e-clouds can provide the security necessary to ensure the preservation and integrity of information.

The information security problems in e-clouds are twofold: the service provider and the client, but the biggest burden is always on the service provider, it is bound to provide a strong infrastructure and secure storage tools and warehouses. In order to prevent the spread of cybercrime, government policies must adopt a deterrent legal system.

Keywords: The information security problems, cloud computing, e-governance, Algerian government policy.

الملخص:

من بين الصعوبات التي تواجه الحكومات في صياغة سياسات تكنولوجيا المعلومات والاتصالات أن التكنولوجيا التي يفترض أن يسخرها صانعو القرار للتنمية على المستوى الوطني، غالبا ما تكون غير مألوفة لديهم أو أن معرفتهم بها و بالمواضيع التي يعالجونها تكون متواضعة؛ ونظرا لذلك فإن العديد من صانعي القرار، يلقون بأنفسهم بعيدا عن سياسات تكنولوجيا المعلومات والاتصالات؛ غير أنه قد لا يدرك التكنولوجيون، بما فيهم مبرمجو ومهندسو الحواسيب، في كثير من الأحيان، أبعاد وآثار سياسة معينة تتعلق بالتكنولوجيات التي يقومون بتطويرها واستخدامها، لذلك قامت منظمة الإسكوا بإحداث " أكاديمية تكنولوجيا المعلومات والاتصالات من أجل التنمية لقادة القطاع الحكومي في المنطقة العربية" للعمل على تطوير سلسلة من الوحدات التدريبية التي تستهدف:

أولا: صانعي القرار على مستوى الحكومة الوطنية والإدارات المحلية المسئولة عن سياسات تكنولوجيا المعلومات والاتصالات؛

ثانيا: الكوادر الحكومية المسئولة عن تطوير وتنفيذ تطبيقات تستند إلى تكنولوجيا المعلومات والاتصالات؛

ثالثا: مديري القطاع العام الذين يحتاجون لتوظيف أدوات تكنولوجيا المعلومات والاتصالات في إدارة المشاريع.

إلا أن ذلك لن يتأتى إلا من خلال تحقيق الحوكمة الإلكترونية، لتمتين العلاقة بين السلطة والمجتمع المدني؛ و لتحقيق كل ذلك لا بد من أن تلجأ الدولة الى نظم الحوسبة السحابية ، كونها تكنولوجيا تعتمد على نقل المعالجة ومساحة التخزين الخاصة بالحاسوب إلى ما يسمى السحابة، وهي أجهزة خوادم يتم الوصول إليها عن طريق الانترنت، لتتحول البرامج من منتجات إلى خدمات ويتاح للمستخدمين الوصول إليها عبر الإنترنت دون الحاجة إلى امتلاك المعرفة والخبرة والتحكم بالعتاد.

الكلمات المفتاحية: إشكالات أمن المعلومات، الحوسبة السحابية، الحوكمة الإلكترونية، السياسة الحكومية الجزائرية

Introduction

The last decades of the twentieth century marked the emergence of major developments in the world of information and communications, which led to the expansion of the use of computers and IT applications, which led to the creation of an environment that helped to use automated processing systems. The computer information system contributes positively to the provision of useful information in strategy planning, Decisions made by individuals and entities inside and outside the facility, should be in order to achieve the desired benefits and should be timely and accurate. This means that the latest information technology should be used. In view of the development of technologies available through the web and the rapid increase in Internet speeds available to users, many organizations have made their applications available for use through the Internet in what is known : cloud computing, where this technology enabled its users better features such as saving costs or providing services to a larger sector of beneficiaries. It was therefore incumbent on the State to take legislative and administrative measures, to maintain automated treatment systems against the crimes that it faced.

the importance of this research:

The importance of this research is about the emergence of major developments in the world of information and communications which led to the expansion of the use of computers and IT applications, which led to the creation of an environment that helped the use of automated processing systems. The accounting information system contributes positively to the provision of useful information in planning, Decisions to be made by individuals and entities inside and outside the facility and in order to achieve the desired benefits should be timely and accurate. This means that the latest information technology should be used. With the development of technologies available through the web and the rapid increase in Internet speeds available to users, many organizations have made their applications available for use through the Internet in what is known as cloud computing, where this technology enabled its users better features such as saving costs or providing services to a larger sector of beneficiaries. It was therefore incumbent on the State to take legislative and administrative measures to maintain automated treatment systems against the crimes it faced.

the goals of this research:

This research aims to identify the Algerian experience in the field of combating cybercrime and how electronic governance has been used to achieve this; After discussing some comparative legislation.

The relevance (relation) of this research to the themes of the conference:

The subject has a strong connection to one of the axes of the conference: the law, where this research deals with all related about the crimes of informations treatment.

So What laws have worked to achieve cloud computing security through Algeria's electronic governance and comparative systems? This **problem** will be answered through this intervention, According to the two following axes:

The first: The Relationship between E -Government and Cloud Computing.

- Government use of the cloud
- The Algerian state achieves cloud computing security through its implementation of e-governance:

The second: Cyber security in Algeria:

- The Algerian Communications Complex.
- The Algerian legislation for the suppression of cybercrime.

This paper will conclude with conclusions and recommendations.

1- The Relationship between E -Government and Cloud Computing.

- E-governance:

E-governance is the use of information and communication technology (ICT) for the provision of government services, the exchange of information on communications transactions, the integration of different systems and services between the government and the citizen (G2C), between the government and each other (G2G) So the E-governance is the application of Information Technology to the processes of government functioning to bring about Smart Moral Accountable Responsive Transparent Governance[1].

- Cloud computing:

Cloud computing is a feature of the age. You work and keep your files on the cloud and you can access these files from any computer connected to the Internet, a PC, a tablet or a smart phone, your files are uploaded on corporate servers and can only be accessed by those who give it permission. And its aim is to provide communication and storage resources in a protected environment to deliver the services as fast as possible, which is provided via Internet platform[1].

Cloud computing is used to help the E -governments in providing best possible services to its stockholders citizens and businesses, and to reduce the costs by reducing repetitive operations and Increase the effective use of resources, in the global arena. Some agencies in Australia seek for innovative ways to deliver government services and want to rationalize their ICT asset so they commenced small pilots to evaluate the potential of application, platforms and infra-structure cloud computing[1] . The cloud environment with security is the best option. Cloud computing is cheaper than other computing models, Moreover, it is characterized by:

-A distributed system where applications are stored in a cloud of decentralized servers that can be reached through an Internet connection and a Web browser.

-A strong extensibility at the applications, platforms and infrastructures levels.

-The resources offered by the cloud can be dynamically assigned according to the need.

-A strong tolerance when one or several resources breakdown.

1 - Tamara Almarabeh, Yousef Kh . Majdalawi, Hiba Mohammad, Cloud Computing of E- Government, scientific research publisher, vol 8 N°1, 18 february, 2016, pp 4,5.

-A business models where customers pay according to the resources used[2].

Cloud computing technologies have many benefits in different parts of E-government. These benefits discussed in the following points:

- - Scalability: Cloud computing resources such as CPU, servers, hard drives can be purchased automatically in any quantity at any time to fit growing number of users
- - Availability and Accessibility: cloud computing applications and information are hosted online therefore it has high availability and citizens can use them at anytime and from anywhere
- - Cost Saving: cloud computing systems do not need to purchase and install the ICT equipments and software on their own building .
- - Backup and Recovery: Since all the data is stored in the cloud, backing it up and restoring is much simpler than traditional way
- - Unlimited Storage. Storing information in the cloud gives you almost unlimited storage capacity.
- - Green technology: Cloud computing is relatively good in energy consumption and provides eco-systems through virtual services .

Due to cloud computing benefits as mentioned above, many countries have launched E-governance services using cloud computing[3].

A- <u>Government use of the cloud</u>

One way in which government action can affect the development of the cloud economy is through its own cloud use for administration and for the provision of public services. Governments are among the most important – in smaller developing countries often the largest – purchasers of IT equipment and services. Computer equipment and software licences represent significant expenditure for Governments, and the possible cost savings are important drivers for government cloud adoption. Government policies vis-à-vis cloud adoption are hence important.

(a) Consider the role of the Government in the establishment of national data centres

Governments in developing countries should consider investing directly in data centre capacity, taking into account the experience of other countries.

2 - Inderpreet Kaur, Kiran Bala, E-Governance: Benefits and Challenges of Cloud Based Architecture, nternatIonal Journal of Computer SCIenCe and teChnology (IJCST) Vo l . 6, I S S u e 3, J u l y – S e p T 2015, p 35.

3 - Tamara Almarabeh, Yousef Kh . Majdalawi, Hiba Mohammad, op.cit 4,5

(b) Improve e-government services through government cloud use

There are many instances in which individual government services are being provided through, or supported by, the cloud. In education, cloud services can make available larger libraries of content. They can also support the delivery of mass-market services, that rely on personal data, such as health, tax and benefit/welfare systems. Similarly, processes such as business registration, customs administration and the payment of taxes and licence fees can be facilitated through online provision or through the cloud. Some Governments have adopted a "cloud first" approach (e.g., the Republic of Moldova and the United States), requiring government agencies to consider cloud provisioning before more conventional alternatives.

Although some cloud-related initiatives form part of comprehensive government strategies, in many countries, decisions to introduce particular cloud services are being taken on an ad hoc basis by individual government departments. One consequence is that cloud provisioning can become unsystematic, risking limited interoperability between systems that deal with the same citizens and losing some of the economies of scope and scale that might otherwise have been realized.

(c) Use public procurement as a tool to support local IT sector development

There is a strong case for more coordination in government procurement of cloud services (as indeed there is for other IT services)[4].

Although cloud computing offers a lot of advantages to E-government , several issues and challenges need to be targeted or to be met when applying cloud computing.

The main issues and challenges for adopting cloud computing for the E-government are:

- Security and privacy: Security requirements must be fulfilled on several layers where the Implementation of cloud computing includes advanced security technologies .

- Data protection and compliance: some data protection regulations do not allow

the storage of sensitive data in other countries, which is basically not accomplished by most cloud service providers[5]

In this context, Governments can seek to ensure that their procurement practices are conducive to greater involvement of domestic suppliers, especially

4 - The Cloud Economy and Developing Countries, InformatIon Economy report 2013, , UNITED NATIONS CONFERENCE ON TRADE AND DEVELOPMENT, New York and Geneva 2013, p91.

5 - Tamara Almarabeh, Yousef Kh . Majdalawi, Hiba Mohammad, op.cit 4,5.

SMEs. This involves attention to transparency, openness and clarity of specifications. There are also various ways, in which the structuring of the procurement process can be adapted to fit the skills and capabilities of software SMEs. At the same time, local IT firms will only be able to compete effectively if they have the necessary skills and capabilities. Thus, it is important to connect the public procurement strategy with efforts aimed at strengthening the capabilities of the local IT industry[6].

The cloud storage: To simplify the concept of cloud storage we can say that it is a huge computers that have a huge storage space users upload their files to be stored in the hardware, and companies are creating and launching programs in the framework of cloud computing[1].

Dropbox is one of the most popular sites offering cloud storage. It offers 2GB of free storage and can be uploaded up to 16 GB by inviting friends to register or write topics about them in the forums and put the referral link on your topic to record the others .

Google Drive is the cloud storage service provided by Google 5 GB of free storage Ability to share and edit files in bulk Integration with other Google services like google plus and Gmail email Support for google docs editor If you buy storage, your storage space in gmail will increase from 10 to 25 GB Buy 100GB of storage for $ 4.99 per month and 1000GB for $ 49.99 per month[2].

B- <u>The Algerian state achieves cloud computing security through its implementation of e-governance:</u>

The use of cloud computing in higher education faces many challenges due to the relative novelty of cloud services in the market and the market underdevelopment of cloud services. For higher education, decisions to adopt cloud computing will be influenced by the nature of technology and cost considerations.

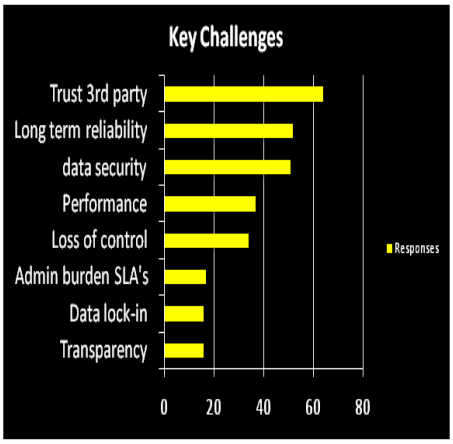
Information is the lifeblood of higher education, and decisions on how to manage this information can be linked to many long-term political, social, and economic considerations.

6 - The Cloud Economy and Developing Countries, InformatIon Economy report 2013, op cit, p91.

7 - What is cloud storage: http://kayfa-how.blogspot.com/2013/05/cloud-storage.html

Cloud computing faces many risks and challenges when deciding on the process of use and similar in the case of more traditional outsourcing. The greater likelihood that the service provider or source of the service abroad does not follow regional and government laws may make some of these concerns more severe.

Carnegie Mellon Pennsylvania has set out some of the challenges that will face higher education when adopting cloud computing:



- Security

Data privacy is a major concern, users do not have control or do not know where their data is stored. Some believe that information is not safe unless it is managed in an internal network. Others believe that providing the necessary security to ensure the preservation and integrity of information is the responsibility of the service provider. It is necessary to provide a strong infrastructure, tools and secure storage, especially if it is physically .

- Interoperability Interoperability

A global set of standards and / or interfaces has not been defined, resulting in significant risks from cloud service providers' control.

Control Control and the amount of control in the cloud environment is a major obsession.

- Performance

The cloud is accessed over the Internet, the latency in all communication between the user and the environment is one of the things to consider.

- Reliability and Reliability

Many suction infrastructures fail unexpectedly[8].

8 - Cloud Computing in Higher Education: Assessment and Accreditation, https://arablibrarian.wordpress.com/tag/%D9%81%D9%88%D8%A7%D8%A6%D8%AF-%D8%A7%D9%84%D8%AD%D9%88%D8%B3%D8%A8%D8%A9-%D8%A7%D9%84%D8%B3%D8%AD%D8%A7%D8%A8%D9%8A%D8%A9/

2- Cyber security in Algeria:

A- The Algerian Communications Complex.

Algeria Telecom, a public institution established in 2003, is active in the field of fixed and mobile phones Mobilis, Internet services and satellite communications. Created under Law 2000/03 related to the restructuring of the postal and communications sector to separate the postal sector from telecommunications. Where was ruled by the Order No 75-89, which includes the Postal and Transport Law of 30/12/1975 issued in the Official journal No. 418.

Aware of the challenges posed by the remarkable development of information and communications technologies, the Algerian State has embarked on profound reforms in the postal and communications sector since 1999, which was reflected in the enactment of a new law for the sector in August 2000, In order to implement this principle, an independent regulatory authority was established, administratively and financially, as well as traders, one of which is responsible for postal activities and postal financial services, represented by the "Algeria Post"

It was established in accordance with the law of 2000/03 dated August 5, 2000, which was set forth in the general rules for post and communication, as well as the decision of the National Council for State Contributions (CNPE) dated 01 March 2001, which provided for the establishment of an economic public institution called "Telecom Algerie"[9].

B- The Algerian legislation for the suppression of cybercrime

The Algerian legislator has allocated in the Third Book on Crimes and Misdemeanors of Part II on Criminalization in Penal Code through Law No. 04-15 of 10/11 / 2004 .about the automated data processing systems .

w.algerietelecom.dz/AR/?p=presentation

Executive Decree No. 98/257, which regulates the conditions and modalities of setting up and exploiting internet services, has been defined. Article 2 defines Internet service. Article 14 stipulates the Internet provider's obligations to the joint customers.

- **special protection of automated processing systems:**

Law N° 09-04 states that for the purposes of public order and for the requirements of investigations and judicial investigations, electronic communications are monitored and inspections within an information system.

It also provided for the possibility of carrying out the controls provided for, in Article 3 in the following cases:

- For the prevention of acts described as crimes of terrorism or sabotage or crimes against state security ,in this case public prosecutor of the Algiers District Council shall grant judicial police officers belonging to the National Commission for the Prevention and Control of Crimes related to Information and Communication Technologies a permit for a period of six months renewable.

-In the case of information on acts of aggression against an information system, in a way that threatens the public order, the national defense, the institutions of the state or the national economy.

- For the purposes of investigations and judicial investigations when it is difficult to obtain a result of ongoing investigations without recourse to electronic surveillance and in the framework of the implementation of requests for mutual international legal assistance; these cases may not be monitored by the written permission of the competent judicial authority.

Several laws have been passed regulating IT and automated processing systems.

- **Objective protection of automated processing systems:**

The Algerian legislator has allocated section VII bis of chapter III, entitled Offenses and misdemeanors against money, in Part II, entitled Offenses and Misdemeanors against Individuals, of the Third Book on Crimes and Misdemeanors and Penalties of Part II on Criminalization in the Penal Code through Law N°: 04-15 of 10/11 / 2004 issued in the Official jornal N° 71 dated November 10, 2004. To limit the automated data processing systems through the following texts:

Article N° 394 bis: Anyone who enters or remains cheating in all or part of a system for the automatic processing of data or attempts to do so shall be punished by imprisonment from three months to one year and a fine of 50,000 to 100,000. The penalty shall be doubled if it results in the deletion or alteration of the system's data. If the acts mentioned above result in

sabotage of the system of operation of the system, the penalty shall be imprisonment from six months to two years and a fine from 50,000 to 150,000 d / c.

Article N° 394 bis 1: A penalty of imprisonment from 6 months to 3 years and a fine of 500,000 to 2,000,000 d / c. Anyone who fraudulently inserts data into the automated processing system or removes or falsifies the data contained therein.

Article N° 394 bis 2: A penalty of imprisonment from two months to three years and a fine of 1,000,000 to 5,000,000 d / c. Whoever intentionally and fraudulently commits the following:

1 .Design, research, assemble, provide, publish or trade in data stored, processed or transmitted through an information system in which the offenses set out in this section may be committed.

2 .Possession, disclosure, publication or use for any purpose, the data obtained from one of the crimes provided for in this section.

Article N° 394 bis 3: The penalties provided for in this section shall be doubled if the crime targets the national defense or the bodies and institutions subject to public law without prejudice to the application of more severe penalties.

Article N° 394 bis 4: A person who commits an offense under this section shall be liable to a fine of five times the maximum fine prescribed for the natural person.

Article N° 394 bis 5: Any person who participated in a group or agreement formed for the purpose of preparing for one or more of the crimes stipulated in this section. This preparation was embodied by one or several physical acts punishable by the penalties prescribed for the crime itself.

Article N° 394 bis 6: While retaining the rights of other good-intentioned persons, the confiscation of the devices, programs and means used shall be governed by the closure of the sites that are the object of a crime punishable under this section, as well as the closure of the shop or the place of exploitation if the crime was committed with the knowledge of its owner.

Article N° 394 bis 7: The attempt to commit the misdemeanors stipulated in this section shall be punishable by the penalties prescribed for the same offense.

The Law N° 90-04 states that for the purposes of public order and for the requirements of investigations and judicial investigations, electronic communications are monitored and inspections and seizures are carried out within an information system.

It also provided for the possibility of carrying out the controls provided for in Article 3 above in the following cases:

- For the prevention of acts described as crimes of terrorism or sabotage or crimes against state security ,in this case The Attorney-General of the Algiers District Council shall grant judicial police officers belonging to the National Commission for the Prevention and Control of Crimes related to Information and Communication Technologies a permit for a period of six months renewable.

-In the case of information on acts of aggression against an information system, in a way that threatens the public order, the national defense, the institutions of the state or the national economy.

- For the purposes of investigations and judicial investigations when it is difficult to obtain a result of ongoing investigations without recourse to electronic surveillance and in the framework of the implementation of requests for mutual international legal assistance; these cases may not be monitored by the written permission of the competent judicial authority10.

Article 5 also allows access to a particular information system for inspection as well as the inspection of information stored in it. Article 6 states that if the competent authority has discovered data stored in the disclosure of the crimes or the perpetrators, it may be seized or copies necessary, Ensure data integrity.

Article 7 states that if the aforementioned detention is not possible for technical reasons, the competent authority must prevent access to the data contained in the information system and prevent its copying. Article 8 prohibits access to data whose contents constitute a crime.

Therefore, the service providers shall assist the authorities in accordance with the provisions of Article 10 of this Law by placing the data required at their disposal in accordance with the provisions of Article 11. These include: technical characteristics, duration, date and time of each communication, data to identify the addressee and URLs , In addition to the client to save data that allows to identify the source of communication and locate.

As for the obligations of the Internet service providers, Article 12 stipulates that the service providers must immediately intervene to withdraw the contents that they are allowed to access once they know that they are in violation of the law and to store them or make entry into them impossible, in addition to establishing technical arrangements that allow limited access to the distributors Contain a violation of public order or morals and inform the participants of their existence.

With regard to jurisdiction, the aforementioned law stipulates that Algerian courts shall have jurisdiction over offenses related to information and communication technologies committed outside the national territory when the perpetrator is a foreigner and targets Algerian state institutions, national defense or the strategic interests of the national economy.

10 - See Article N° 3 and Article N°4 of Law N°09/04 of 5 August 2009 containing the special rules for the prevention and control of crimes related to information and communication technologies; Official jornal No. 47 issued on 16 August 2009.

In the context of investigations or investigations, Exchange of international judicial assistance to the international collection to collect evidence of crime in electronic form [11].

Law N°. 2000-03 has been amended by virtue of the Finance Act 2015 issued in the Official jornal Issue No. 78 issued on 31/12/2014. Regarding the failure of the client benefiting from the license to comply with the conditions stipulated in the legislation governing this sector and the financial penalties imposed on him by the control authority, in addition to his excuses for the violation[12].

Law N°. 15-04 of 1 February 2015 concerning the definition of general rules relating to electronic signature and certification, issued in Official jornal No. 60 issued on 10/02/2014.

The electronic signature is defined as data in electronic form that is attached or logically linked to other electronic data used as a means of authentication. The electronic certificate is a document in electronic form that establishes the link between electronic signature and location verification data. For the electronic certification certificate described, article 15 provides that a set of conditions are available[13].

Article 60 states that a person shall be punished with imprisonment for a period of three months to three years and a fine of 20,000 to 200,000 or with only one of the two penalties.

Article 68 stipulates that imprisonment from 3 months to 3 years and a fine of 1,000,000 to 5,000,000 shall be punishable by either of those two penalties. Anyone who holds, discloses or uses the data of the establishment of an electronic signature is prescribed for others.

The latest amendment to the Penal Code, which stipulates the information and communication technology, was in accordance with Act No. 16-02 of 19 June 2016, supplementing Order No. 66-156 of 8 July 1966, which includes the Algerian Penal Code. Official jornal of the Republic of Algeria No. 37 issued on 22 June 2016.

Which states that: anyone who uses information and communication technology, whether Algerian or foreign, residing in Algeria in a legitimate manner, who travels or tries to travel to another country for the purpose of committing, preparing, participating in, training, Years to 10 years and a fine of 100,000 to 500,000 d / c.

It also stipulates that a person who uses information and communication technology to recruit persons for the benefit of a terrorist, association, organization or organized group whose purpose or activities are subject to the provisions of this section or to regulate their

11 - See Articles N°15 and 16 of Law N°09/04 mentioned above.
12 - See Articles N° 35, 39, 39 bis, 40 bis, 40 bis, 65 bis, 66 bis, 66 bis 1 of amended and supplemented Law 2000-03.
13 -See Article N° 2 and Article N°15 of Law N°15-04 mentioned above.

affairs shall be punished by imprisonment of 5 to 10 years and a fine of 100,000 to 500,000 d / Or supports its activities or activities or publishes its ideas directly or indirectly[14].

Article 394 bis 8 of Law 16-02 stipulates that without prejudice to the administrative penalties provided for in the current legislation and regulation, imprisonment shall be imposed from one to three years and a fine of 2,000,000 to 10,000,000 dirhams or only one of these penalties is provided by a service provider "Internet" is defined by Article 2 of Law No. 09-04 of August 5, 2009, which contains the special rules for the prevention of crimes related to Information and communication technologies, which, despite being excused from the national authority provided for in the said law or issued by a court order or order, is not required to do so:

A) by immediate intervention to withdraw or store the contents that are accessible or made accessible when they contain contents that constitute legally prescribed offenses;

B) Establish technical arrangements to allow the withdrawal or storage of contents relating to the offenses set out in paragraph (a) of this article or to make entry into it impossible" .

Law No. 16/03 on the use of DNA in judicial proceedings and identification of persons, dated 19 June 2016 issued in the Official jornal of the Republic of Algeria (No. 37 of 22 June 2016), was issued

Provided that biological samples may be taken in order to obtain DNA from: 1. Persons suspected of committing crimes or misdemeanors against the security of the State or against persons, public morals, funds, public order or crimes under the Anti-Vaccination Act or the Anti-Bleaching Act The financing of terrorism or any other crime or misdemeanor if the competent judicial authority deems it necessary[15]. It is noted here that the use of these scientific methods in criminal proof of the crimes of automated treatments was not provided.

- **Procedural protection of automated processing systems**

Article 13 to 18 of the Arab Convention on Combating Information Technology Crimes, published in Cairo on 21/12/2010, was ratified by Algeria under Presidential Decree 14/252 on 08/09/2014 (No. 57 issued on 28/09/2014 However, information technology is used as a means of committing crimes.

The crime of informatics have two corners:

The physical element: It is the criminal behavior, and it is also punishable to proceed according to article 394 bis 7.

The Moral corner: It is the flag of the perpetrator criminal (in a manner of fraud).

14 - See Articles N°87 bis 11 and 87 bis 12 of Law N°16-02 above.
15 - See Article N°5 of Law N°16-03 mentioned above.

Presidential Decree N° 15/261 dated 08/10/2015 on the composition, organization and functioning of the National Commission for the Prevention and Control of Crimes Related to Information and Communication Technologies (Decree N°. 53 of 08/10/2015) stipulates that the Commission exercises functions Provided for in article 14 of Law N°. 09/04 on automated processing systems, under the control of the judiciary, such as the collection, preservation, recording and identification of source and track data, in order to identify the perpetrators of such crimes.

Law N° 06/22 of 20 December 2006 on penal procedures also provides for electronic surveillance in article 65 bis 5, under the heading of objection to wireless communications and technical arrangements. Article 65 bis 12 provided for a leak, where the police officer used an identity card and accused the suspect of being a partner.

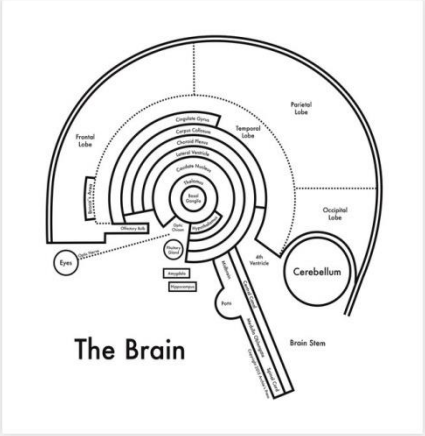
Conclusion:

The Cloud provides an effective solution to almost every problem faced to implement the E-Governance successfully. also it Strengthen ICT infrastructure and raise human capital.

However and spite of all the efforts made by Algeria in the security of information and communication technology and the maintenance of electronic processing systems, it did not achieve the required development.

in view of the development of crime in this field, Algeria did not take the scientific means to prove the criminal in this crime, especially regarding the brain fingerprinting and its importance in proving Criminal justice as a certificate that makes no mistake, as modern technology contributes. it took only the DNA for proving crime but this is not enough and insufficient.

Brain Fingerprinting is designed to determine whether an individual recognizes specific information related to an event or activity by measuring electrical brain wave responses to words, phrases, or pictures presented on a computer screen. In this respect, Brain Fingerprinting is considered as a type of Guilty Knowledge Test, where the "guilty" expected to react strongly to the relevant detail of the event of activity. so the Brain Fingerprinting is more accurate in detecting "guilty" .



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