

## **Identification in Cyberspace as a Main Challenge of e-Government (A Legal Approach to e-Identity Management System)**

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**Abstract:** *The penetration and growth of the Internet, as a key technology of the 21st century, caused to some major changes in all individual and social aspects of human life. Some of these changes, which associated with the evolution and changes in the concepts, including legal and political ones, have become a challenge. Identity as a legal and Government as a political concepts are in those fields which have changed and faced challenges in cyberspace. As, identity is difficult to be verified and authenticated over the internet, it leads to problematic aspects of identification in cyberspace. From the public administrative perspective, in fact, the challenge of identity is one of the legal challenges of e-Government. As e-government becomes a reality, all legal and political policy makers, are in an attempt to overcome the challenges of identification in the virtual environment of the internet. Thus the need for building a new legal framework for identification and authentication, as a key prerequisite of e-Government, becomes increasingly urgent. The present article discusses the legal issues of identity and identification in e-Government and tries to propose the solution to related challenges.*

**Keywords:** *e-Government, e-identity, e-Identification, Virtual Identity, Virtual Civil Registration.*

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### **Introduction**

The penetration and growth of the Internet caused to some major socio-cultural changes which have been associated with the evolution and changes in the notional concepts including legal ones. Identity as a legal concept is one of those fields which faced some challenges in cyberspace. Due to the development of electronic services, governments faced a need to identify persons in cyberspace. Identification in cyberspace, in particular due to the specificity of this space is carried out more often. It is because; the Identification in cyberspace takes place without direct physical presence of the individual. Identification in physical space is carried out while using one of the mandatory identification measures – an appropriate personal document. Such identification, while using official state-issued documents, may be termed as official identification. But identity in cyberspace is mostly established by what the user has introduced by him or her. Then there arises a question what identity verification measures should be used in cyberspace?

With regard to Identity, the Legal systems face some barriers in adopting a non-paper process of identification via an electronic or virtual process. The first and the main obstacle that would arise is the question of legality or legitimacy. Thus, the e-Government should set some legal requirements for identification in cyberspace (United Nations e-Government survey, 2014). The e-government, in accordance with the norms of law, should be ready to adapt their legislative framework to apply ‘electronic equivalents’ of traditional paper procedures, and also should provide the legal preconditions of building a new process for identity and identification in electronic environments. The Legal prerequisites of such a process are really a vital matter for e-Governments. The main obstacle in this way refers to the lack of legal basis, which can only be conferred by legislative measures. Then the first

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step is the legal recognizing and accepting a virtual or electronic identity and identification for citizens (Darius & Marius, 2011, p. 724). Hence, providing legality and legitimacy to a new construction of identity needs a new legislation to regulate the digital, virtual or electronic form of identity known as e-ID (electronic identity or electronic identification).

The challenge of identity, in fact, is one of the legal challenges of e-Government. Thus, e-identity is the key to enter the e-Government. For this, governments in the Information Age, by designing a new legal framework for identity known as Electronic or Digital Identity Management System, are in an attempt to overcome these challenges. The emergence of a virtual, digital or electronic identity in cyberspace; beside the real identity of people is one of the challenges of the virtual environment of the Internet. Freedom of identity, anonymity, irresponsibility, authenticity and identification in cyberspace are some of the legal issues, considered as challenges of identity in cyberspace. The rise of these challenges about the question of identity in cyberspace may need appearing law on the issue of identity in e-Government. To build and promote an e-identity management system, e-governments need a national strategy, bringing the Law, Management and Technology together supporting the e-identity infrastructure. Thus, the three legal, managerial and technological frameworks should be developed according to the requirements of the electronic environment. In between, the legal infrastructure should be paid more attention and care.

### **Challenges of Identity in Cyberspace**

#### ***E-Government: Governance in Cyberspace***

The term e-Government (short for Electronic Government, also known Digital Government or Online Government) focuses on the use of new information and communication technologies (ICTs) by governments as applied to the full range of government functions (Bernd & Peter, 2015, p. 8). Thus, e-Governance can be defined as a process of public administration and the provision of government services through the use of information and communication technology (OECD, 2011). The emergence of a phenomenon as to identity which is called virtual, electronic or digital identity was the beginning of much debate among scholars of the subject related to identity, and everyone has agreed upon that identity has been challenged in the age of information technology. Transformation and developments of the human lifestyle, personality, and identity due to internet have been led to emerging issues which made the entry of the law into the information technology environment inevitable. Anonymity, as a most important issue of identity is one of the legal aspects of identity in cyberspace. Nowadays, it is generally accepted that individual's communication and interactions in the virtual space of the internet has been turned into a category which is beyond an electronic social communication (Halperin & Backhouse, 2009, pp. 44-45).

E-Government is creating a comfortable, transparent, and cheap interaction between government and citizens. The use of technology to enhance the access to and delivery of government services to benefit citizens, business partners and employees, help to implement high quality governance in the emerging global information society. The anticipated benefits of e-Government includes efficiency, improved services, better accessibility of public services, and more transparency and accountability (Machilek & Shuts, 2006, PP.32-54). Although there may be virtual identities which truly correspond to real persons in almost every aspect, but, the majority of people illusory anonymity of the cyberspace to enjoy the freedom to be anybody they want to be. Such people create various masks painted with false colors. The freedom to be anybody means a particular individual chooses a pseudonym and identifies him/herself with this pseudonym in the cyberspace. The possibility to make an identity or to change virtually our own identities can be done unlimitedly. From the point of law, it may create some problem, because the freedom to be anybody that we want means to break the general principle of operation of law.

Since the government supposed to deal with citizens in an electronic environment, it is better both become electronic. This means that to have full administrative public services any e-government needs all citizens are electronic. Electronic Citizen which known as Netizen (Network Citizen) and is called, also digital, virtual or cyber citizen is an Internet user who uses the Internet as a way of participating in social and political society for example, exchanging views, providing information, and voting (Mary &

Jack, 2003, pp.427–432). Such a citizen, clearly has - and should have- a specific identity which necessarily is electronic. As the identity is at the core of each citizen's everyday actions and every time they interact with private or public institutions, then the need for a solid proof of identity is crucial both in the real or virtual world. Thus, to be placed in services and controlled or monitored, e-citizens should be identified and authenticated by e-governments. An electronic, digital or virtual identity is the identity of real world individuals in cyberspace, which can be considered as an identification solution of citizens (Hauben, 2008, P.141).

### **E-Identity: Identity in Cyberspace**

Identity is a set of characteristics, and behavioral, social, and personality features of an individual, which could distinguish and identify him from other people (Mia & Juan & Molina, 2010, p17). Therefore, identity is similar to personal-social birth certificate of each person that distinguishes him from others. Identity is not commonly known term in the legal sense. In other words, identity cannot be found neither in the language of the lawyers, nor in any law books as an independent subject. Although, this does not mean that the issue of identity has no place in the legal science; it must be said that the legal concept of identity isn't something apart from the lexical and customary meaning of words. The subject and aim of law is the *person* and the protection of his rights, and identity is also an integral part of every person's existence. Legally speaking, the term *person* is used for an individual who is provided with rights and duties.

Legal identity-the identity which has been granted officially by government-is crucial for legal empowerment. If you are not legally recognized as a person, it is difficult to make the law work for you. It means legal identity plays a crucial role in an individual's ability to claim their legal rights.. So the main function and application of the identity in law is identifying and distinguishing one person from others, in order to grant his rights or impose his obligations. This takes place in all legal systems through an identity card (if not in all cases, but in specific situations) which contains specifications and characteristics of the person. Basically, both legal and social life of the person (such as legal and trade relations) and enforcement of law (such as the ability of police to pursue and arrest criminals) are depends on the identification of person in the community, which is carried out through using identification card or identity card. Identification document is a document issued to a person that enables verification of his or her identity. Thus, Identification is the process necessary to validate or recognize identity (Garner, 2004, P.524).

### **Legal Challenges of E-Identity in Cyberspace**

Cyberspace is a meta-spatial and meta-temporal entity, thus, this is influence on identities created in it. Time and place have lost their common perception and sensibility in the cyberspace, so that they have a both real (physical) and virtual implication. As a matter of fact, unlike the real world, we can be in several places at the same time in the internet world. Therefore, some argue that since cyberspace have not time and space boundaries, and these two elements are closely related to the theme of identity, so in this case, the issue of human identity in cyberspace will be faced with many challenges. Regarding to identity, Cyberspace provides us with the freedom to be anybody we want (Rannenber & Royer, 2009, p.159) it allows us to communicate almost with anybody in the world. Everybody chooses a mask of some appearance, a certain social role and comes in with a new shape of identity which is included in many manuscripts of the information technology field with the titles like Network Identity, Internet Identity Electronic Identity, Digital Identity, Online identity and Virtual Identity.in this study Virtual Identity is considered synonymous with aforementioned terms and used interchangeably. Then, by virtual identity we mean an online or electronic identity adopted or claimed in cyberspace by an individual, organization or electronic device. These users may also project more than one digital identity through multiple communities. In terms of digital identity management, key areas of concern are security and privacy (Clare, 2011, p.42).

The word Virtual means a feature, or operation that does not exist, but appears to be so. But in the context of cyberspace; it has a concept of its own. Some authors in the conceptualization of the word virtual defined it as an extension of reality or substitute for reality (Shields, 2003, p.6). In other words,

the word virtual embraces everyday understandings of the term, as that which is so in essence, but not actually so, implying a reality, but not one that is concrete. But it seems better to consider it as a process which implies a material embodiment that exists as an entity (Levy, 1998, pp.23-34). So, it means, the word virtual refers to a subjective reality with a social construction or a reconstitution of reality, created collectively and based on electronic environment. Emerging such a phenomenon about identity was the beginning of much debate among scholars of the subject related to identity, and everyone has agreed on that identity has been challenged in the age of information technology.

**Anonymity:** One of the significant challenges from the legal point of view is the impossibility of controlling and monitoring a virtual identity. This claim is rooted in the unknown identity of the user in the virtual space, which is called anonymity. Anonymity is the state of being not identifiable (Marx, 2001, p.2-19). Anonymity makes it possible for the users to hide behind a virtual persona via a username. The essence of freedom of a place or geographical location means hiding the real identity; anonymity and obscurity means a sense of insouciance, lack of commitment, and responsibility towards our actions and behaviors, which could facilitate the background for violating and trampling the rights of others in cyberspace. This is one of the main distinguishing features of the virtual world from the real world. People are always controlled by restricting factors and tools such as culture, custom, law, place, time, government, and so on in the real or actual life (Grohol, 2006, P.198). In other words, individuals are always subjected to the identification, supervision and control in their social life boundaries; and it is an unwanted control mechanism that prevents people from unreasonable and irrational behavior in their daily life and social behavior. Cyberspace is free from all the constraints of the real world, and this leads to a legal challenge; and increasing the use of the internet and the expansion of virtual community, human identity in this unlimited world will be uncontrollable and hard to supervise and monitor.

**Identification and authentication:** A legal challenge of identity in the cyberspace is the issue of identification or authentication; which has been facing new challenges in cyberspace. The inseparability of identity in cyberspace means the impossibility of authentication and its confirmation. In other words, it is very difficult to distinguish between real virtual identity (legal) and unreal virtual identity (illegal) in the cyberspace. There are well-known strategies for the authentication of individuals in the traditional (non-virtual) world. For example, in the face of a person, an identity document helps to identify and distinguish the individual, or in the area of business transactions, they use the person's signature for authenticity and the correctness of a writing or document and assign it to a particular person, which has long been a popular authentication method for most people. Moreover, other examples include the scientific identification methods (such as fingerprints or application of biological and genetic signs) that are used frequently in the criminal law (in crime detection, identification and prosecution of offenders) (Vankokswijk, 2011, p169).

It must be admitted that the special characteristics of virtual environments which are the results of their differences with the real world, could pose the identity or originality determination challenges. This is so important that lawmakers of the virtual world must necessarily prepare themselves for dealing with this challenge. The researcher will explain this issue in more details in later sections, particularly in the section related to the practical encounter of the lawmaker with this juridical challenge. In the existing conventional paper-based processes with personal appearance identification is usually carried out using identity cards. Authentication is provided by handwritten signatures. When in e-government official processes are carried out electronically, both identification and authentication remain important aspects and need to be supported electronically. This may be provided by introducing a virtual, digital or electronic substitute of paper-based office documents and handwritten signature system (Morteza, 2016, pp.1-22).

#### **Identity Management: Virtual Civil Registration**

Official procedures usually require that the citizen is properly identified. This may be needed to ensure that the person approaching the authority is the one that has filed an application such as tracking the status of a request, for exercising certain rights such as representing a company or being a party in a proceeding. Because Internet communication is conducted through computers and equipment in a

nonphysical and intangible environment, the way and process of user identification become a problem. Today, the e-Governments by designing an *Identity Management System*, which is an emerging field, try to solve the problematic issues of identity in cyberspace (Plan of Action: e-Government for Development, G8 Summit, 2016).

Today, the e-Governments by designing an *Identity Management System*, which is an emerging field, try to solve the problematic issues of identity in cyberspace. The first steps in the establishment of any components of e-Government including Identity Management System, to provide its basic infrastructures. From a legal perspective, regarding the identity and identification management in e-Government, revising the civil registration legislations, not in the real world, but in cyberspace, is one of the key governments' priorities. As in real space, Civil Registration Systems record vital events such as birth and is the usual first step in recognition of existence in a person's life; in cyberspace it also can be done electronically. Thus, a virtual or electronic system for Civil Registry of individuals is needed to register a new type of vital event (e-identity) for a new type of citizens (e-citizen). So, a Virtual Civil Registration System, that its main function is to provide the e-certified documents necessary for an individual to prove his or her legal identity, can be considered as a necessary component of e-government to provide administrative e-services (Clare, 2011, p.20).

### **Designing a Legal System of Electronic Identification**

Civil Registration defined as continuous, permanent, compulsory, and universal recording of the occurrence and characteristics of vital events (live births, deaths, fetal deaths, marriages, and divorces) and other civil status events pertaining to the population as provided by decree, law, or regulation, in accordance with the legal requirements in each country. It establishes and provides legal documentation of such events. These records are also an essential source of vital statistics. Thus, the Civil Registration System is the institutional, legal, and technical norms established by the government to conduct civil registration in a technical, sound, coordinated, and standardized manner throughout the country, taking into account cultural and social circumstances particular to the country (Palvia & Sharma, 2007, pp.1-12). Such a system has different names in different countries but all are known as Civil Registration Organization or Civil Registry Office (e.g. In Iran the registration of vital events and confirmation of identity and citizenship documents is carried on by the National Civil Registration Organization).

### **Regulations and Requirements of Virtual Civil Registration System**

The author believes that if computer and electronic scientists could plan, such technological infrastructures, jurists could introduce its legal framework. For example, in discussing identity, determine a solution for issues related to main identity in the virtual space such as binding or non-binding individuals into a virtual identity, procedures for creating legal virtual identities, issues relating to identification and proving the identity of an individual, and other related issues. Some of the legal issues relating to identity in the legal system of identification will be discussed here.

### **Legal Recognition of Electronic Citizenship**

From the tangible consequences of the influence of internet on the human personality, we can point to the alteration of Citizens in the real world into the citizen of a globally connected Internet. The real world citizen is becoming a network citizen, known as "Netizen", and at the same way, changes have happened to human citizenship in an electronic society. Accordingly, citizenship law, by recognition of "the right of net" or "the right of internet", as a human right, has taken a new shape and conception. With the advent of cyberspace as a new society, the ways of communications and conducting human activities have substantially changed. Consequently, the change in human communications has resulted in the change of law. Indeed the Information Technology has brought about human rights into the "Network" and represented the novel topic of "electronic citizenship law" which, also is called "cyber citizenship", "network citizenship" or "digital citizenship law" synonymously (Moscosio 2014, pp.124-26).

In fact, the new topic of electronic citizenship law as one of the legal aspects or issues of cyber law, peruses the rights and duties of individuals in cyberspace. It is one of the vital elements of electronic or

cyber society. Because that it is no longer sufficient for people to assert their rights and responsibilities in cyberspace as citizens of nation-states. If the goals of global social justice and e-governance are to be served, people now also need to assert their rights and responsibilities as *Netizens*. To achieve this goal, it is necessary that each individual has a unique legal personal identity in cyberspace (Morteza, 2015, pp.97–106).

### **Granting a Unique Official Virtual Identity**

There is unique and independent identity for each person in the real world, which his legal personality is established based on this unique identity. Regulating the relationships between individuals (as the main duty of the law) is depending on the clarity of their rights and duties towards each other and towards the government (e.g. Department of Finance, banks, police, etc.). Clarification of the rights and obligations of the both the parties is also depending on their distinct identity's characteristics. Studying virtual identity from the point of law would lead to a practical impact when it was synchronized with the primary purpose of the law. This implied that we must define a legal personality for virtual identity like traditional world; in order to assign a legal right and duty and juridical life to virtual identity (Van Kokswijk, 2008, p. 38). In traditional (non-virtual) process of identification and proving identity in the real encounters takes place through the identification documents. Since the rules and regulations governing the identities characteristics of people are common in all legal systems, and constitute a part of the public order as mandatory laws, therefore, people have not much freedom in selecting their own identification features (such as name and surname or place of staying) and they are obligated to follow these rules and regulations. The electronic model (or virtual) registration system with the same legal functions necessary should be implemented in virtual space; in order to issuing identification cards, or virtual birth certificates for citizens of internet virtual community just similar to the traditional system of registration (Morteza, 2016, pp.1-22)

The legal adoption and recognition of virtual identity means that each member of society must have a virtual identification card in cyberspace, alongside with traditional paper-based identity card (ID card or birth certificate). In terms of law, the virtual identity that legislature formally assigns to each individual based on a specific regulation called legally virtual personality or legal virtual identity. However, the first and most important step in controlling and monitoring individuals and their performance in the virtual world are recognizing an independent and unique virtual identity for the citizens of the digital world. It also involves designing a virtual legal registration system, as in the traditional model with similar functions for the future of virtual society. Thus, the recognition of virtual personality or virtual identity through granting a formal and legal mandatory virtual birth certificate for all electronic citizens was one of the necessities and requirements for the cyberspace.

### **The Possibility of Identification and Authentication**

Another necessity of identity legal system is providing contexts for possibility of identification and authentication of virtual identities of all internet users. It is practically performed for facing the challenge of identity confirmation and authentication in the cyberspace. Accordingly, computer and technical scientists has been introducing many different means and approaches for the e-identification process, but no one is reassured about the authentication and correctness of attribution. Currently, the only feasible and practical solution that both technically and legally approved and accepted is electronic signature strategy. Electronic signature refers to any form of confirmation that made electronically, perhaps as a sign, token, password, word, number, type in a name, the adoption of digital handwritten signature, or electronic proof of identity which is adopted by the issuer or his deputy and incorporated into a contract or any other document. Nowadays, electronic signature is accepted globally in all legal systems. Moreover, similar to traditional mechanisms in which, authentication and assurance and confirmation of identity is carried out by third party authorities such as public notary, they are necessary and considered for virtual spaces too, in order to authenticate the identity of electronic signature issuance. The main task of this certificate authority has merely confirmed the authenticity of the identity of the signatory and proper attribution of it to the issuer (Stefanova & Kabakchieva & Nikolov, 2010, pp.189-202).

Although, the use of electronic signature was a very important solutions and relatively solve many problems; However, due to the non-mandatory use of it by the citizens of cyberspace, its only involved insignificant part of the authentication of identity in cyberspace, and just in certain areas of legal and business transactions. At this present, the electronic signature is not applied to all domains and all users of the internet even in the juridical relations domain. However, some believe that even if the legal authorities mandate the electronic signature for all electronic communication and transactions of people with themselves and others, the challenge of identity authentication may not resolve completely, because there are many unknown dimensions of the digital world. The legal requirements regarding the control and supervision of identity is the need to provide a legal and official means for identification of the identity of all users and conformity or non-conformity with it with information of issuance.

### **Discussion and Conclusion**

Although virtual or electronic identification is an emerging phenomenon which leads to some challenges, but it is not a new creation; and regardless of the specific characteristics and conditions of cyberspace, which has an impact on all human affairs, no particular event has occurred for identity. In other words, from a legal perspective, the influence of cyberspace on identity is not an alteration of the content, but a change in the form, evidence, or procedure. Consequently, dealing with the issue of identity in cyberspace, there is no difference between the virtual and the real world. Therefore general rules and regulations, applicable to the identity in the real world, can be applied in cyberspace as well. This does not mean, however, that new issues about identity does not require any legal preparation, or law have not any obligation for virtual identity; but also its emphasized that legislators should be present and active in the virtual space proportionate to advances and developments in the world of technology. Governments of Information Technology Age, known as e-Government, tend to bring their governance into cyberspace and do public administration services electronically. The major obstacle to the government's possibility to make public administrative services fully electronic is the lack of a reliable method for verifying a person's identity over the World Wide Web. For this; e-Governments are preparing to design a new legal framework for identity management. As the legal systems has provided anyone with a unique identity, and predicted the process of protecting their rights, they must also think about designing a Virtual Civil Registry System for the future of the cyberspace, where endowed any of the internet users with a unique Virtual Identification Card, and also provided the possibility of controlling and monitoring virtual identities. Thus, the design of an identity registration management system for the future of virtual society is inevitable. A system like what we have in the real world that make it possible to trace one's virtual content to one's real world identity. As in real space, Civil Registration records vital events such as birth and is the usual first step in recognition of existence in a person's life; in cyberspace it also can be done electronically. Thus, a virtual or electronic system for Civil Registry of individuals is needed to register a new type of vital event (e-identity) for a new type of citizens (e-citizen).

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