Legal Regulations to Protect the Privacy and Data of IoT Technologies Users

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Abstract: In this paper, we mention the importance of IoT technology applications in the fields of medicine, agriculture, industry and others, as well as the legislation of the countries of the world with regard to the technology of the Internet of things and the laws that protect privacy and data of users of IoT applications.

Keywords: Internet of Things (IOT), Smart Cities, Smart Home, IOT Laws, 5G.

Introduction

In recent years, the spread of the Internet has become everywhere in the world, and it is not linked to a computer and mobile phone only, it is connected to every electronic sensor, surveillance camera, and all modern machines that provide service to humanity. This is thanks to the development of Internet data transmission technologies. [1] [9]

The development of deep learning technologies, social networks, search engines, and database security has been reflected in the development of IoT technologies. [3] [4] [8].

The technologies of the Internet of things have provided great services to humanity in education, e-commerce, agriculture, and the medical field in early detection of diseases. [7] [14] [15] [11]. In addition, governments use many IOT technologies, for example, the use of traffic police to detect drivers' fatigue, for the purpose of reducing traffic accidents.[5][6].

The development of the communications network to the 5G technologies will develop many of the efficiency and speed of IOT devices and applications. [10]

The science of sensors developed until it became possible to know the emotional state of a person and his feelings. [2]

Internet of Things (IoT)

The Internet of things is a groups of sensors, devices, cameras and programs that exchange data between them via the Internet. The definition of the Internet of Things has evolved due to the convergence of multiple technologies, real-time analytics, machine learning, commodity sensors, and embedded systems.

There are a number of serious concerns about dangers in the growth of IoT, especially in the areas of privacy and security, and consequently industry and governmental moves to address these concerns have begun including the development of international standards. [19] [10]

Applications of Internet of Things (IoT)

Connected vehicles, home automation, wearable technology, connected health, and appliances with remote monitoring capabilities. These applications are a consumer service provided by IoT technologies. Smart home applications have evolved greatly, especially lighting, heating and air conditioning, media and security systems and camera systems. Also energy savings by automatically ensuring lights and electronics are turned off. [10] [20] [21]

The field of medicine and elderly care, which is one of the most important areas that serve people, as sensors, devices and programs have been developed to monitor the elderly and diagnose chronic diseases at a lower cost than traditional devices. The most important medical technologies that have been developed are heart sensors, sugar and blood pressure. In addition to early detection devices for diseases. [15] [12]

In addition to we mentioned previously. Internet of Things applications have become too many in human life and the most important areas are Transportation, communications, Industrial applications, Manufacturing, Agriculture, Infrastructure applications, Metropolitan scale deployments, Energy management, Environmental monitoring, Living Lab, Military applications, Ocean of Things, Product digitization.

Legal Regulations to Protect the Privacy and Data of IOT Users

As the technologies of the Internet of Things have developed and made it work more efficiently, a lot of data must be stored and processed in the data cloud. This method is called deep learning. The large data stored in the data cloud makes it easy for theft and breach of privacy and property rights to the data.

IoT regulation depends on the country. The United States of America is the country with the most legislation to protect privacy and data for Internet of things technologies.

The US Privacy Act of 1974, OECD Guidelines on the Protection of Privacy and Transborder Flows of Personal Data of 1980. [16]. A resolution passed by the Senate in March 2015, is already being considered by the Congress. In March 2016, a bipartisan group of four Senators proposed a bill, The Developing Innovation and Growing the Internet of Things (DIGIT) Act, to direct the Federal Communications Commission to assess the need for more spectrum to connect IoT devices. [17]. Approved on 28 September 2018, Senate Bill No. 327 goes into effect on 1 January 2020. [18]. The bill requires "a manufacturer of a connected device, as those terms are defined, to equip the device with a reasonable security feature or features that are appropriate to the nature and function of the device, appropriate to the information it may collect, contain, or transmit, and designed to protect the device and any information contained therein from unauthorized access, destruction, use, modification, or disclosure,". [10]

As for the legislation of the European Union countries for IOT technology. European Union Directive 95/46 / EC of 1995 regarding user data and privacy. As for the majority of countries in the world, the breach of privacy and theft of data are computer and Internet crimes. [13]. There is no legislation specific to Internet technologies of things Because Internet of Things technologies are considered new technologies and are still in the development stage and every period they enter into a new field of human life. It is very difficult for governments to create new legislation so quickly for new technologies.

The 5th Generation Cellular Networks is one of the factors that helps developers rapidly develop IoT technologies. The 5G wireless communication network supports the speed of transferring data and information between Internet devices thus developed the Internet devices that serve people in the fields of transportation and medicine.

The main problem facing the 5G is its accusation that it causes health harm to people. Many experts confirmed that the use of the fifth generation network causes cancer, brain, infertility and heart tumors despite the scientific consensus is a safe technology. [22]. As a result, most of the European Union countries voted to ban the use of 5G technology in their countries.[23]

During the COVID-19 pandemic, at least 61 suspected arson attacks against phone antennas in the UK alone and over two dozen in the Netherlands because many conspiracy theories circulating online have postulated a link between Covid-19 and 5G, as well as incidents of sabotage from 5G towers. In addition to the incidents that occurred in the Netherlands, Ireland, Italy, Croatia and Belgium. [24]

All these obstacles facing the legislation of the laws of operating the 5G communication technology have a negative impact on the development of IoT technologies, and thus it is also difficult to legislate laws that protect Internet of things technologies in all countries of the world.

Conclusion & Future work

In this paper, we explained the importance of Internet of things technologies and their important role in human life and the necessary services it provides to people, especially in the fields of medicine, agriculture, electronic commerce and security. We also mentioned the most important legal regulations that countries use to maintain the privacy and data of IoT users.

In this paper, we suggest that the countries of the world legislate new laws related to the technology of the Internet of things in all its fields, instead of the traditional laws and legislations related to computer and Internet crimes. To preserve the privacy and data of IoT technology users.

The governments of the countries of the world should allocate laboratories and organizations specialized in examining new communication technologies, including the 5G technology and the extent of its real impact on human health, since this 5G technology supports applications of Internet of things devices and supports the high speed of data and information transfer between devices of the Internet of things

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