Internet of Things Application in Advertising Design

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Abstract:

The development in the advertising industry led designers to try to develop technical advertising systems compatible with digital progress and with the recipient. The aesthetic and economic aspect was achieved with the use of the Internet as a medium around the world. The online advertising market is worth hundreds of billions of dollars and is one of the fastest growing online businesses, however online advertising is still limited to web browser and more recently, mobile applications. With the advent of the fourth digital revolution, the Internet of Things (IoT) technologies have opened a new, large-scale and pervasive digital advertising landscape. End users constantly interact with it in their daily lives. With the beginning of the current century, many high-performance smart technologies such as the Internet of Things, artificial intelligence and interaction have appeared, which have been used in many industrial and applied systems, as they have entered into all aspects of our daily lives with what they achieve at the utilitarian, environmental, economic and aesthetic level, in addition to being compatible with digital development and the recipient. Therefore, this research aims to monitor the applications of the uses of the Internet of Things in advertising design as new advertising system that is compatible with the recipient and achieve the aesthetic, functional and economic aspects. The research concluded that the uses of Internet of Things devices by finding a line between what it can provide as services directed to the recipient in real time and by using the relevant brands.

Keywords:
IoT - Digital Advertising- Advertising Design

Research introduction:

If we take into account that the computer that was created in 1966 and used in the Apollo system is considered one of the first systems that rely on linking with things in the contemporary sense of this term, it is the actual beginning of the concept of accessing and operating devices via the Internet within the artificial intelligence system, as its concept is based On any processor managed by a real-time system with an application dedicated to operating a device (thing) on the basis of data collected from it. Hence, devices within the Internet of Things are equipped with a processor, system, and embedded software applications that are completely independent. [Reference No. 5].

The term Internet of Things, which was first circulated as a concept in 1999, can be simply defined as a network of interconnected devices over the Internet, which is a very broad scope for device uses as the word "device/thing" may refer to computers and phones. Smart vehicles, home equipment, manufacturing devices, medical devices and even entire buildings and the list can be much longer which can be illustrated by (Fig. 1).
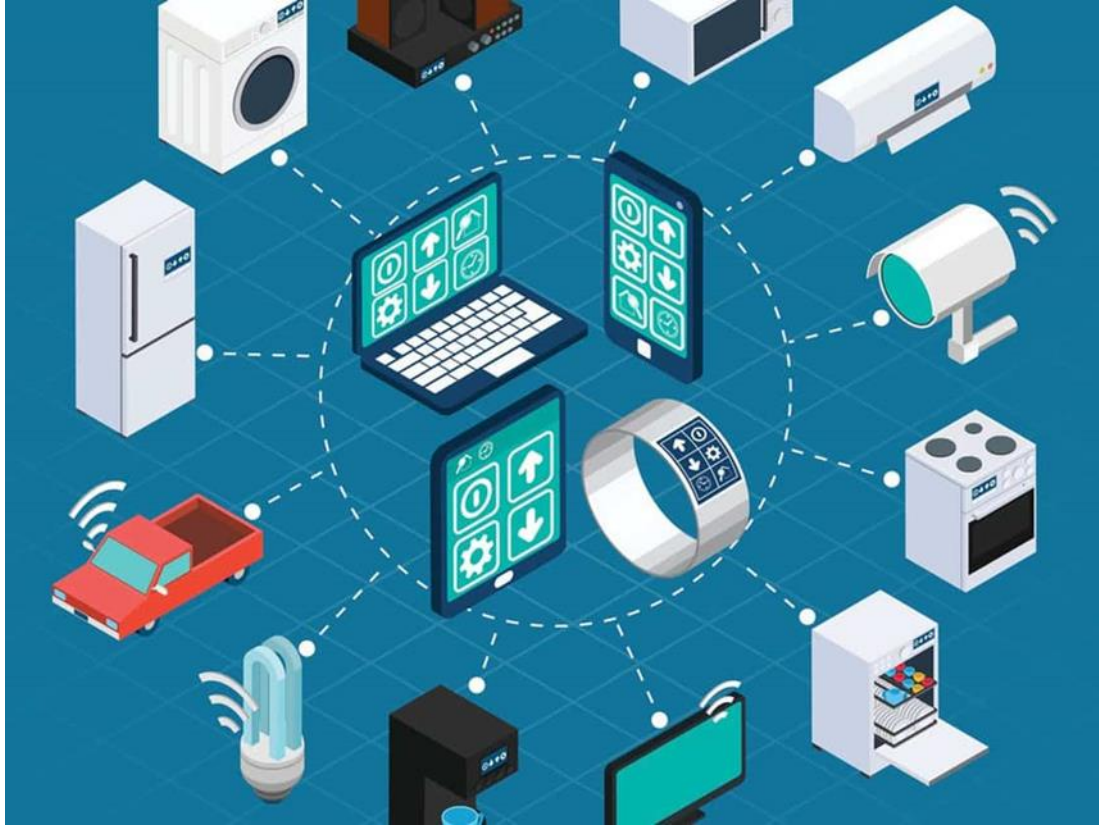
The current pace of development of the Internet of Things (IoT), digital controls, networks and software is causing profound changes. With the increase in the number of IoT devices, economic markets are shifting towards these technologies. According to Market Insights of IoT reports, the number of IoT devices is expected to grow to 22 billion by 2025 as against 12 billion non-IoT devices. According to McKinsey & Company's Global Media Report in 2015, $11 trillion in economic impact is expected to be spent via IoT technologies by 2025. The integration of IoT technologies will enhance the quality of control over physical objects. (Reference No. 2)

Research problem:
With the advent of the fourth digital revolution, IoT technologies have opened up a new, large-scale, and pervasive digital advertising landscape, as the new IoT advertising market takes advantage of a huge range of smart devices, such as projectors, home appliances, smart cars, and many other connected digital gadgets, that users interact with. Finalists constantly in their daily lives. Which created the need to employ the applications of the Internet of Things in advertising design to keep pace with the development in digital technologies and correspond with the characteristics of the recipient in the digital age.

Search goal:
This research aims to monitor the applications of the Internet of Things in advertising design as new digital advertising systems that are compatible with the environment and the recipient and achieve aesthetic, functional and economic aspects.

research importance:

The importance of the research stems from:

- Providing research information about the development and employment of applications using the Internet of Things in advertising design.
- Supporting advertising design systems with a new digital direction that is compatible with the environment and the recipient.

Research hypothesis:

  The research hypothesizes that employing high-performance smart technologies applications for the Internet of Things will lead to upgrading the utilitarian, environmental, economic and aesthetic level of advertising systems, in addition to being compatible with digital development and the recipient.

search terms:

Internet of Things (IoT): A network of interconnected devices via the Internet, which is an important technology in the field of modern wireless communications. It is based on a set of sensor nodes (SNs) connected via wireless sensor networks (WSNs).

Smart packaging: It is considered one of the examples of how some brands use IoT technology to strengthen the mental image of the brand and communicate with consumers.

Research axes:

The research is divided into three main axes:

1/ Internet of Things (concept - components - features).

2/ Components of the Internet of Things advertising system.

3/ Case studies: for Internet of Things applications in advertising.

Research Results:

1- The formal and informative architecture of the Internet of Things systems is designed so that it is flexible and expandable systems to deal with the continuous increase of new smart devices and smart compatibility with the set of new services and applications that employ the Internet of Things as part of its design, marketing and sales policies and strategies.

2- Marketing studies through the Internet of Things system have become able to collect more data about customers' characteristics and behaviors, and then learn how to create customized products and services for them to better meet their needs.

3- Smart packaging is one of the examples of how some brands use IoT technology to strengthen the mental image of the brand and communicate with consumers, which has achieved success due to its ability to communicate quickly through QR Codes.

4- A major challenge arose for both marketers and advertisers represented in how to use the information available to them through IoT technology in a non-intrusive manner, as the basic idea of marketing these products and services successfully is through personalizing marketing messages based on data collected about each individual, which makes The challenge is great.

5- It adopts the philosophy of the global trend for the uses of Internet of Things devices by finding a dividing line between what it can provide as services directed to the recipient in real

time and using relevant brands, and then it can provide an advertising pattern that can be described as truly personal and without unwanted intrusion.

Search recommendations:

1- Orientation towards employing Internet of Things applications in advertising design directed to the Egyptian community.

2- The need to move towards achieving integration between marketing studies and the Internet of Things system to create customized products and services for customers that are better compatible with meeting their needs.

3- Going towards conducting more scientific research in the fields of artificial intelligence and its applications in the field of advertising.

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