



## Building the Digital Advertising Ecosystem under technologies Internet of Things (IOT)

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### Introduction

In the eighties and nineties of the last century the world he lived in an era of computing and office personal computers, this wave that went on in full swing for a period of nearly 15 years they were the character of that era, with the development of processors and screens moved to roaming age where the launch of the new era of technology. Since that time and until the moment, We carry in our pockets as he could carry out tasks than those carried out by the computer huge desk sits at our offices 10 years ago, but a huge wave appeared Ours is what is known as the era of "Internet of things " (IOT), concept of Internet of things provides new opportunities and creates the largest and influential broader values daily life of consumers and businesses to marketers, in order to achieve sustainability and competitiveness in the long term, and supports the impact of the Internet concept of things is the emergence of many based on this concept and that enrich the Digital Advertising industry and make it more interactive and efficient in the advertising management, such as (Wearable technology, Mobile advertising Applications , Online advertising).

Internet Of Things concept allows consumers to enjoy interacting with physical objects and provide decisions of purchasing, he specializes integrates hardware smart functions and services, portable, which will directly affect the success and efficiency in daily tasks, all the innovations need represent the driving force for technologies Internet of things, and related needs of the growing consumers, and with the technological growth and massive web-based broadband, which became available widely, and the cost is decreasing steadily, in fact most of the devices from computers, mobile phones and other manufactured advantage of Wi-Fi, which paved the way for the exit of the Internet Of Things.

And building upon the techniques and modern devices are becoming affect the pattern of consumption and effect change the style digital advertising industry, and the digitization of content, and the technical challenges of the digital advertising has become a challenge for marketers, advertising agencies and companies face difficulty in attracting new business, the Internet is affecting the lives of products and services cycle with the nature of marketing which are constantly changing, and to understand the media's current and future trends and the consumer has to be thinking about the past and the present is the path of the main inputs in dealing with distant features and potential contracts.

Through the above the idea of research was to study the ecosystem to digital advertising by integrating Internet of Things technologies in marketing and advertising strategies to enrich the digital advertisement industry and raising the profile of these technologies and their linkages with consumer's consumption environments



### **Key Words:**

Internet of Things ,Digital advertising ecosystem ,Wearable technology ,Sixth sense technology ,Real-time Bidding RTB , Mobile advertising ,Location-based advertising (LBA)

### **Statement of the Problem**

Summarized the problem of research on answering the following questions:

- 1- What are the motives and the main trends in the industry of digital Advertising in the light of the concept of the Internet of Things?
- 2- How can technology applications of the Internet of Things Helping in the building of an ecosystem successful digital Advertising, and the reforming of the relationship between the Brand and consumer?

### **Importance Research**

Determined the importance of research in the study of the concept of the Internet of Things and get benefits of technologies associated with in building an ecosystem successful digital Advertising depends on enriching the relationship between the Brand and the consumer, and the Search derives its importance through the following:

- 1- The importance of getting out of the traditional reality in the design of the Digital Advertising.
- 2- The disclosure of the importance of technological applications of the Internet things as a method of communication and interactive in the digital Advertising.

### **Research Objective**

- 1- emphasize the importance of the role and value of technological applications for the Internet of Things in the construction of Digital Advertising Ecosystem.

### **Research hypotheses**

The researcher is hypothesis that:

1. The recruitment of technological applications of the Internet things help of interactive communication in the design of digital Advertising.
2. Investment the technological applications of the Internet things in the design of digital Advertising lead to build an ecosystem successful digital Advertising.

### **Research limits**

**The objective limits:** Take advantage of the technological applications of the Internet things (wearable technology, applications mobile Advertising, the Advertising on the Internet) in the design of the digital Advertising.

### **Research Methodology**

Search depends on the descriptive approach through the survey scientific productions of the publication in the area of Internet things technology through the data and information collection and analysis to extract the significance, access to the results of the latter's effectiveness in the building of the ecosystem of the digital Advertising.



## Theoretical Framework

### The first axis: the concept of an Internet of Things.

It is during this part the internet of things defined as a scenario that offers the ability to transport and control and interaction between data devices via the Internet, a trend technology emerging being the addition of technological wizards sensors and the ability to connect to the network between different devices, internet of things is the result of convergence and mating between wireless technologies and Electromechanical systems and the Internet, the goal of Internet of things is to enable things to be connected anytime, anywhere, with anything and anyone using any track / network and any service.

Consumers have been classified under the concept of the Internet of things through the demographic division by age to:

- Traditional consumers (before it was born in 1945)
- Consumers (born 1946 to 1964)
- Consumers pre-millennium generation (born from 1965 to 1976)
- Consumers millennium generation (born from 1977 to 1995).

It was to clarify the digital needs of the consumer model in light of the concept of the Internet of things, and offer a range of relevant growth and promote things like the concept of the Internet like: Web of Things (WOT) ,Smart Phone ,Cloud Computing.

### The Second Axis: Internet of things technologies:

It is during this part has been studied most associated with the concept of the Internet of things as study wearable technologies, as part of the thought of computing everywhere and anywhere, it allows the consumer to interact while exercising his other tasks, the Google glasses is the most famous example of wearable computers, then clarify how the reliance on technology devices to wear in brand marketing by modifying consumer behavior in three ways, as follows:

- Increased consumer power to devices wearable technology
- Adjusted consumer perceptions about applications of this technology
- Add new capabilities of consumer behaviors.

It was also a study of The Sixth Sense, applications and associated technologies such as augmented reality technology, and gestures recognition technology, computer vision and their relationship to digital advertising.

### The third axis: The conceptual framework of the digital advertising under the internet of things:

It is during this part of the study of the concept of digital advertising, and a definition of the concept of digital Ecosystem as interconnected network of elements with each other's technical system opens for digital environment of advertising, and to clarify the components of the digital ecosystem (Digital User, Digital Community, Digital Content, Digital Service) was developed example of the Ecosystem of the digital fast food restaurant Domino's Pizza.

It was presented to some of the terminology and techniques associated with digital advertising in light of the concept of the Internet of things, such as: CEO search engine optimization, Affiliate marketing, Social media, mobility.

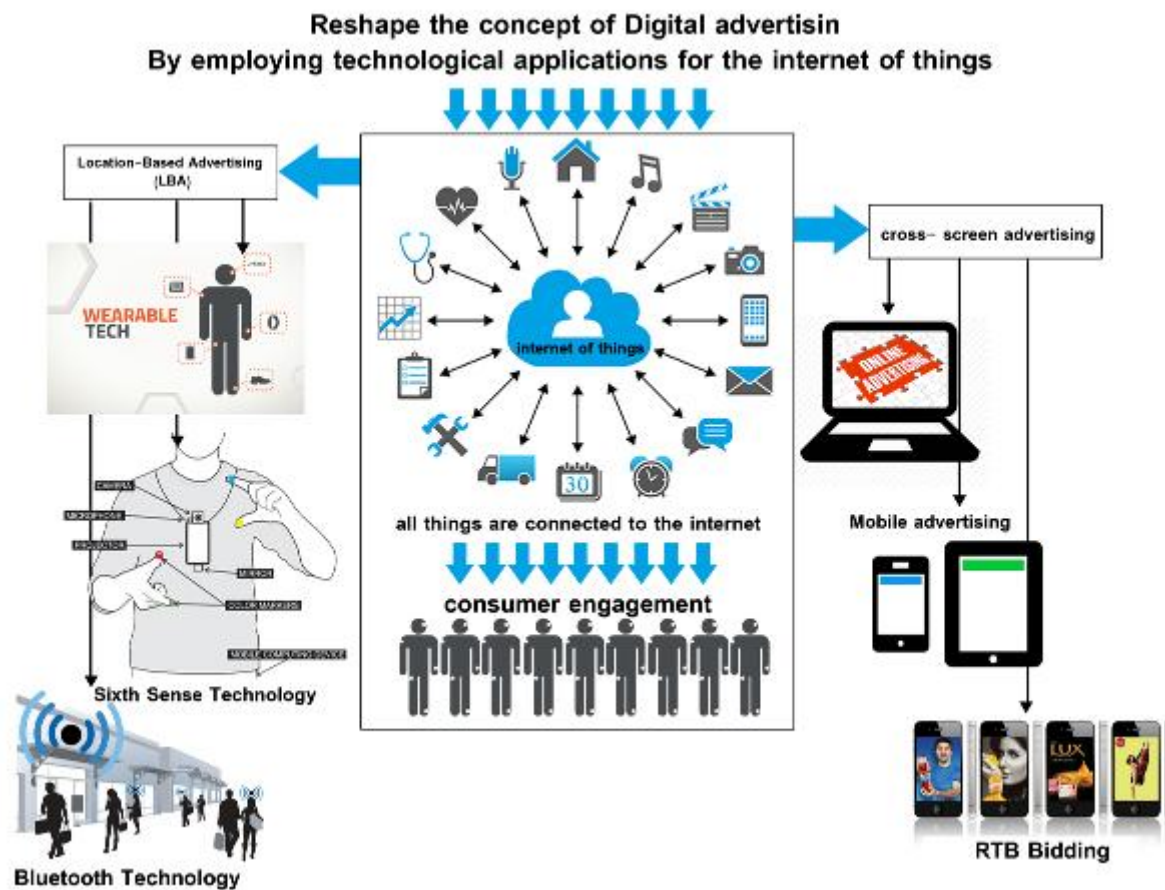
It was presented forms of digital advertising under Internet of things concept according to the nature of the advertising medium, but which are to rely on Internet technologies, things like: Location – Based Advertising (LBA), Mobile Programmatic Advertising , Mobile advertising and devices , REAL-TIME BIDDING for online display advertising (RTB), and finally presented the tools of digital advertising design under the concept of the Internet of things, and to clarify the elements of the Ecosystem is built to digital advertising under the Internet of things, and standards of construction of Ecosystem of the digital advertising



**The fourth axis: Vision proposed to build the ecosystem for digital ads in light of the concept of the Internet of things:**

Through the previous theoretical framework presented was to emphasize the importance of the role and value of technological applications for the Internet of Things in the construction of Digital Advertising Ecosystem (Research Objective) , and through this part of the researcher to build an digital advertising ecosystem under the concept internet of things by investing and employing technological applications for the Internet of Things to occurrence of Interactive communication in digital Advertising design, and aims ecosystem building to reshape the concept of digital advertising through: (Fig No:1 )

- Enable the marketing for concept the Internet of things.
- Enable consumer engagement.
- Employ technological applications for the Internet of Things in interactive digital advertising design.



**Figure (1) Building the Digital Advertising Ecosystem under technologies Internet of Things (IoT) (preparation and design by researcher)**

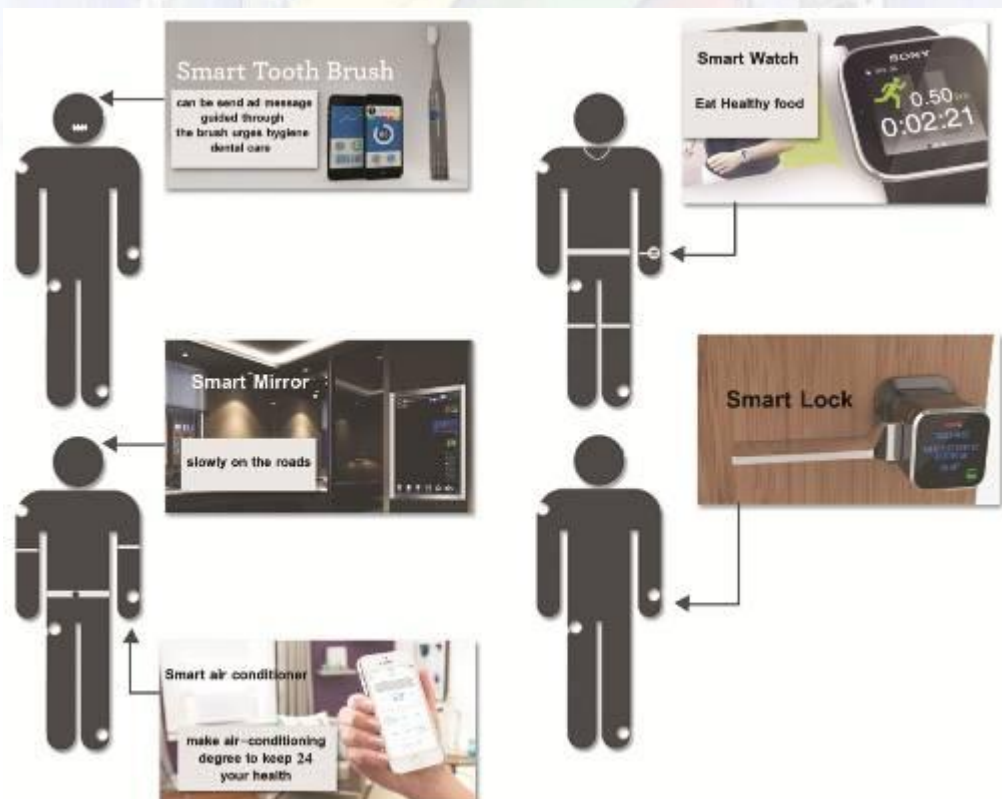
Based on the Figure (1) can the planning and design of a successful advertising campaign based on the technologies and forms of advertising in light of the internet of things concept, but you must understand the consumer deeply and when, where, why and how are consumers engaging with digital media advertising, so data are the basic column of consumer to connect by means of new digital advertising, which help to deal with the brand more interactive, which is based on enriching experience and share content. And then it can rely on smart devices connected to the Internet to display advertising messages synchronic - In real-time to the consumer, and thus makes the advertising easier and more interactive.



You can put an interactive script to build the digital advertising in light of the internet of things concept of the digital environment through the daily life of consumers normal, assuming possession of a set of smart devices connected to the Internet and use advertising as a means to digital advertising can clarify the scenario through the following:

- Wake up in the morning and cleans his teeth using smart toothbrush, which in turn tells him how much time he uses the brush, and whether cleans all over his mouth and peacefully or not (can be sent advertising messages guided through the brush urges hygiene dental care).
- Ready to wear clothes who look into the smart mirror who tells him road conditions abroad and the weather forecast, but most can be done by logging onto online accounts on the social networking and access to news headlines sites (can be an awareness message to maintaining leadership slowly on the road).
- After a tiring day you cannot run the air-conditioning in the house before access, through the application connected to the Internet (make air-conditioning temperature 24 degrees to keep your health).
- After returned to the home of the consumer to wear smart watch equipped with sensors to analyze athletic performance and health status to him and sends a detailed report through its application on his mobile phone (appears next report message indicative type of health foods that should be eaten after exercise).
- Before prepping for sleep can through the mobile phone close the outside door of the house electronic locks linked to the Internet allows for the identification lock times and open automatically.

According to the above, we find that the smart devices group could create a range of new channels and screens for advertisers, these devices provide the associated patterns of consumption and behavior that help consumer's and advertisers to control the advertising message and targeting consumer's timely data. Figure (2)



**Figure (2) Interactive scenario for smart devices to advertising messages design (preparation and design by researcher)**



### research results:

Through theoretical framework to discuss and study the problem, it has been reached for a set of results that enrich the digital advertising industry in light of the concept of the Internet of things could be clarified in the following points:

1. Internet technology will provide things for the digital advertising industry a new generation of digital shops allowing consumers overcome the high rents stores in the physical environment surrounding the restrictions.
2. Every child born in the years to come will learn the language to deal with things Internet devices technologies as a major addition to writing and reading.
3. With the technological development of electronic devices will be smart digital advertising more coordinated between all the screens.
4. The growing reliance on mobile devices and smart development of technology and techniques associated with the Internet of things will depend on the forms of digital advertising specifically associated with the targeting of ads in real time, based on the site and advertising through a combination of trends Consumer and means of digital advertising modern, which leads to more efficiency and synchronous in the formation and measuring the relationship between consumers and brand.
5. The Internet of Things technology will be available inevitable in the near future for markets to evolve in the marketing and advertising strategies to provide brands a digital environment to create a customer or consumers current and potential.
6. The digital advertising industry will be made through the following concepts: computing everywhere, and the presence of volumes of digital low-cost high-capacity, and the spread of communication means rapid Internet, the proliferation of digital devices extensively in various fields, as well as the entry of sensor technology in everything.
7. Mutation logic of dealing with computers, where we are dealing with those devices reached in the mid-twentieth century by the cards then this evolution by dealing with the keyboard and mouse, and now through the sound, and all this in the direction that the computer learning makes decisions on our behalf by Information Analysis The data and the circumstances surrounding us in real time (instantaneous synchronization of the data).
8. Enter the concept of internet of me, which represents another breakthrough for dealing with the computer giant, which began with computers, and desktop and laptop and tablet, and smart phones, and the Internet of Things, and then (digitization and internal control and individual).
9. Entry system innovation in the field of e-procurement and sales so as to provide an interactive environment and enrich the experience of (consumer) user.

### The discussion of results:

The world today is not surrounded by the Earth only but surrounded by technologies and enable us to communicate in real time among many countries, and this naturally affects the advertising industry, accordingly, it could be a set of forecasts and recommendations for the industry of digital Advertising in the light of the concept of the Internet of Things:

1. It must restructure the daily life of the people in accordance with the concept of the Internet of things, including the development of the daily performance of their businesses faster and more efficiently.
2. The management companies must have access to the Internet to accelerate the transition to Internet protocols, which doubles the number of Internet, which can be assigned to the addresses of things, as well as the relevant telecommunications companies to accelerate the upgrading and equipping the fourth and fifth generation services from mobile smartphone services.



3. Must rely on the Sixth Sense technology and viable technology for wear in the advertisement for people with sensory disabilities as an alternative to the missing of the senses they have, they represent smart glasses for the blind navigate in indoor and outdoor venues in addition to the function of facial recognition, and also can help them and warning them when faced with the risks and can provide them with the sense of sight (eye), and also hearing impaired through Smart glasses are feeling sound and convert it to speech and text.
4. You must develop marketing and advertising strategies through authorized on the site that the advertising provides a unique ability to fulfill the promises the marketing value in real time and managing the relationship between brand and consumer's and who seek to navigate and interact simultaneously in the physical and digital world.
5. Advertisers must adopt media strategies based standardization and integration between things Internet technologies and the types of products that face consumer's.
6. Designers must consider ways of design response advertising to benefit from the development of design techniques and suitability with different applications on mobile devices to help ensure that your ad correctly on all screens.
7. You must rely on the data to improve targeting assembly, through integration, analysis, and take advantage of the large and open data fortune in devising new ways to design the ad to target consumer's specific messages, in order to achieve respect for consumer privacy, and that by linking applications and websites on mobile phones (daily preferences of the consumer, social media).

### **A summary of the research:**

Internet term things refers to a growing network of material objects connected to the Internet which we use in our daily lives in order to obtain or send data or to perform simple operations remotely, laptops , smart phones and tablets, Internet of things term things are great opportunities for companies and institutions in being not limited on one side but on the many aspects of the daily life of consumer's, it has emerged many of the new technologies associated with the formation of digital advertising such as cloud computing and the means of social communication and applications of wearable technology and technology sixth sense, which helps to strengthen the eco-system of the declaration of the digital industry.

It is expected that associated the concept of technology Internet and one things of the most technical developments are depending on the user experience, marketers need to get an understanding of the applications of these technologies and the opportunities and threats that will help to grow and is working to strengthen the marketing activity for Brand What, research and aims to emphasize the importance and the role of and the value of technological applications for the Internet of things in the construction of Ecosystem digital advertising, based on the descriptive approach through the scan output scientific publication in the field of Internet of things technology, the research found out the importance of digitization physical with what the area around us and connected to the Internet, providing an interactive digital environment, and in this context can be many problems, which pave the way for new research, including: building advertising strategy depending on the interpretation of the user's behavior digital methods, the ad intelligent and enhance the user experience, and finally put the ad through the screens between the concept and the digitization of content.

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