

## The contribution of technology to the development of marketing behavior

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### Abstract

Marketing is based on a number of factors whose extends to a variety of extents, including technology, which has become an effective element in the movement and growth of life and keeping pace with the rapid changes in various aspects of life. It is worth noting that all arts and print design provide life with everything that contributes to adapting design capabilities to serve functional goals, including marketing, promotion and advertisements, whether about products or services. Therefore, the current research dealt with technology and its role in an attempt to know its importance, which is concerned with building a mental idea that takes care of interpreting the surface visual manifestations of publications of all kinds. The research included two chapters, the first is the research problem and its importance, and the following question was: How can technology control the marketing behavior? The first chapter dealt with the objective of the research, which is manifested in revealing the contribution of technology to the development of marketing behavior. The terms that related to the research were identified, as well as temporal, spatial and objective limits. As for the second chapter, it dealt with two sections, the first section included a study of the concept of technology and its types and its role in the design of publication, marketing, and advertisement and its mechanisms. As for the third chapter, it included the research procedures and the presentation of sample models and their analysis of the research results and conclusions, as well as recommendations and suggestions and a list of sources, and the most prominent results reached by the researcher

**Keywords:** technology - design - marketing behavior - advertising

### Research problem

Life evolves with the development of the means that contribute to the simplification of human matters and that are supported by human thought with the scientific innovations it provides that establishes technological innovation, which can transfer society a qualitative leap that includes culture, civilization and art, and from this point of view the intervention of technology in all the details of life, including those related to design and advertising production and marketing of different services and products, Hence the importance of the behavior that technology may affect negatively or positively, as human behavior changes according to the variables of society and its development, and this reflects the severe complexity that surrounds human behavior, including what technology dominates in controlling the marketing behavior of individuals, and for this the researcher promised that controlling behavior marketing is a matter that worth the study and the problem of its research was identified by the following question: How can technology control marketing behavior?

### Research importance

- 1- It contributes to clarifying the concept of technology in graphic design because of its great importance in the field of graphic design culture for publications that can be used to establish knowledge for designers.
- 2- Identifying the marketing methods of which the designer and the design are a part.

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- 3- The aim of the research: to reveal the contribution of technology to the development of marketing behavior.

### **Research limits**

Objective limits: a study of the contribution of technology to the development of marketing behavior.

Spatial limits: (Apple ads - for electronic devices-published on the Internet)

Time limits: year (1976 - 2022).

### **Fifth: Defining Terms**

**Technology:** It is a set of accumulated and available knowledge, skills, experiences, material, organizational and administrative tools and means that a person uses to exploit environmental resources and adapt their energies to serve him in performing a work or a job in the field of his daily life to satisfy the material and moral needs, whether at the level of the individual or the community.

**development:** It is a means to enable man to achieve greater prosperity and secure a higher standard of his social, health, and educational lifestyle.

**behavior :** it is a set of responses that the individual produces towards various environmental stimuli; Where the environment represents all the influences that support the mechanism of the emergence of behavior.

### **Chapter Two: Theoretical Framework:**

The first topic: the concept of technology and its importance:

The concept of technology is one of the comprehensive concepts because it contains many branches in many fields, including applied technology, data technology, biotechnology, and many other branches, Technology can be defined as the processes that people practice with the aim of bringing about a change in nature to achieve different needs and requirements, as it is the progress and development that humans provide in modern scientific fields, including the development of computer programs and applications, the development of inventions that make life easier, And the development in transportation methods such as planes, express trains, and electricity, and many other innovations, so it can be said that technology is based on engineering, science and the study of the natural world as well. Technology has become of great importance in our lives, as it is one of the things that cannot be dispensed with in life. Technology is one of the activities practiced by man. It has penetrated into various business sectors through the introduction of devices and machines that perform various tasks accurately and without errors. Its impact extended in the educational field, as the use of technological devices and dealing with computers became one of the most important ways that most countries depend on in the field of education, relying on digital languages and using computer- and technology-supported strategies to learning processes, marketing, project management and institutions, and the methods used vary in this field to a large extent, but generally involves the use of computers in the work.

**Design technology:** The computer is one of the most important advanced devices used in the field of design, and its importance is very clear as it is a digital technology with which accessories and other devices are connected to perform the various tasks in which the computer has a role. Computers have made a contribution to the field of design through the great help they provide to humans in general and to the designer in particular, in terms of the technology they provide, reinforced by the presence of applied design programs that have greatly contributed to the creative and innovative process and the achievement of the goals that the designer aspires to. As it saved a lot of time and effort in completing designs at high speed and accuracy, the computer has the ability to work for long times, which allows the designer to work for very long hours and develop his capabilities continuously. It also has the ability to deal with many different technical fields related to the aesthetic, production, media and marketing aspects, because of this positive return on design achievements, and a rewarding economic return in addition to the savings in time and effort, and there is a strong relationship between the computer and artistic production in general and design In particular, it is the relationship of the designer with the machine, during which he shows his ability to innovate and create, also his experiences and his vision of alternatives.(The more the designer's knowledge of the computer language get, its capabilities, and limits expands, this leads to the development of its innovative

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capabilities. The computer provides us with all the ABCs of design, which makes it more essential than other traditional design tools. It also deals with shapes through various technical programs through addition, deletion and repetition, and makes dealing with shapes a direct interaction on the surface of the screen and with the ability to change shapes and sizes easily and quickly. And the integration of the role of the designer and the computer as a result of the scientific and technological development that took place in the field of computers and the emergence of many design programs through which innovative and new designs can be implemented that enrich the design process. It has become possible to produce complex designs that show creativity and mental abilities, as they can be produced with precision and control that is difficult for the ordinary hand or any other tool. Although the computer reduces a lot of effort and time and is characterized by extreme accuracy, the computer supports the comprehensive concept of the design process in improving and raising the efficiency of the product by means of software and systems. In the field of applied design, it is characterized by speed, development and rapid growth, which makes it difficult to predict what will happen in the coming years. As the human being has succeeded in transferring an increasing part of his share of work to machines, and it has become an important tool for innovative activity, as the huge potentials have been utilized in producing, processing and coloring images, and the computer has provided the designer with the ABCs of formation and the matter has extended to the smallest details and aesthetic fields.

And making the technology hub constitute a means of visual communication that depends on the combination of word and form with control over the idea, the image, the word and the color. And it allowed the designer to innovate and employ production methods that could deliver the message to the specific audience. 24 In the field of graphic design, the relationship appeared clear through a group of special programs in design, which contributed to raising the pace of development of the field of design, and at a time when technology was dealing with text and images, it was a reason for the development of design and implementation techniques that contributed to the creation of design programs, Adobe and Quark were among the first companies that opened horizons and doors for graphic design. These and other technologies also contributed to expanding the field for designers to rely on programs and other media applications to work freely. The computer does not design alone, but it implements what is entrusted to it and supports the comprehensive concept of the design process in improving and raising the efficiency of the product through software and systems in the field of applied design. The enormous potential of design software applications had been used in producing and processing images, coloring and shading, producing illustrations, and cartoons, has also been made possible to produce images of objects and processes whose shapes we cannot see, and the computer has provided the designer with the information of forming and seeing the smallest details and aesthetic things, Among the most common design programs, we mention the following:

**Adobe Photoshop** - and is employed as an application program to manipulate images and contribute to obtaining all its technical processors.

**Adobe Illustrator**, which is one of the application programs in the field of desktop publishing, as it is possible to produce an integrated design for a printed paper that includes texts, shapes and images in accordance with what the designer aspires to.

**Corel Draw**, which is one of the most important application programs in the field of publication design because it contains many menus and tools that enable the designer to be creative and innovate and allow him to benefit from the applications available within other programs.

As for the application of technology as a printing technology that supports design, digital printing has had many applied fields in print design to include all areas of life with its design requirements. Various advertisements, whether commercial, economic, social, medical, political, and with their different printed or visual outputs, and all publications that are circulated daily, depend to a large extent on digital printing for the advantages that are available in terms of accuracy, speed, large production, and the ability to control the design during the printing process in terms of deletion and addition. Here are some of the digital printing techniques:

- 1- Electrostatic printing.
- 2- embossed printing.
- 3- Inkjet printing. It is divided into two types:
  - A- Solid Ink Jet
  - b- liquid ink Jet

## Communication process technology

Technology has helped facilitate social communication between people, as communication has become easier than before due to the emergence of technologies and applications that are compatible with global technology systems, as modern means of communication from mobile phones and their applications have made this communication happen as easily as possible through phone calls, e-mail and chat, and other means as well as instant messaging of data or talking to others via video calls, thanks to communication technology and computer networks, the world has become more like a small village. One of the developments is the possibility of using the Internet to make phone calls at a low cost through the so-called (Voice over Internet Protocol VOIP).

Technology has also undertaken many and varied tasks, for example, scientific research and access to information in a shorter time and less cost than before, as the Internet, for example, provides a source available to everyone in order to obtain the information they want. Returning to the common means of communication, we find that journalism has become a huge industry in our time, with its cultural requirements and technical equipment, material, human and even technological, in the light of which is determined the extent of its efficiency in presenting its global message, as the new technology in journalistic work is identified by some as follows:

- 1- The preference for productive technology that depends on the human being at work instead of making him alien to it.
- 2- Preferring technology in which machines are a facilitating factor and not controlling human life.
- 3- The extent of the abundance or scarcity of the two components of labor and capital in light of a specific size of the market.
- 4- The availability of scientific, technical and technological expertise capable of using and developing technology.
- 5- That communication planning aims to achieve the maximum benefit from technology in the least possible time before allocating investments to it.
- 6- The use of inexpensive technology and at the same time related to achieving the goals. The weak production at an earlier time, the large number of errors, the delay in its quality, and its poor printing were behind the necessity of adhering to a conscious planning accompanying the operation of the technology.

Based on these criteria, the goal that newspapers aspire to by adopting modern technology appears. And represented in the development of the production process, and the economic balance between the cost of production and the return achieved, in addition to keeping pace with the information age, we find that information and communication technology has been associated with the life of the individual since advanced stages in his life and promised as an industry and a resource for organizing society, and going back to history we find that the first emergence or early stage witnessed a lot of The role of technology and there are (qualitative leaps from the rapid development in various aspects of life and in all its fields, as the development of information systems and computers dates back to the fifties of the last century, and its impact was clear in the first practice of using computers on a large scale in accounting and financial transactions)<sup>8</sup> and therefore it is not hidden The role of technology in establishing the means of development in the various fields of life.

## The second topic: Technology and Marketing

The identification of the needs and desires of the consumer market for the commodity, and an attempt to renew and develop it in proportion to these changing needs and desires in order to achieve more profit. The specialists classified marketing into three main types that can be clarified as follows:

- 1- Advertising via television or radio and audio radio stations, which is the most expensive depending on the extent of the spread and popularity of the TV or radio channel advertised, in addition to the time when the advertisement for marketing goods and services appears, whether at the normal time, or at the peak time when the percentage of viewers and listeners increases. It should be noted that this marketing idea is integrated as it begins with an idea presented by the company responsible for advertising, while another company specialized in media production produces it for a sum, and then publishes it by another media agency for a sum.
- 2- Direct advertising through traditional parties, such as street vendors, or marketing representatives who publish advertising leaflets in roads, newspapers and magazines, which is also known as print shopping.

3-E-Marketing Advertising: It is the modern type of marketing, and it includes e-mail campaigns, advertising and partnership programs, or through search engines, whether free or paid, and is characterized by being the least expensive compared to the previous type, It depends on the social media represented by Twitter, Facebook, Instagram, Yahoo, YouTube and others, which is the least expensive among all types, and these electronic ads are installed on the pages of the sites that appear in front of the users as soon as they access the site and they are visual and fixed-cost materials, There is a free type through the creation of self-pages to communicate with the consumer audience directly. The importance of marketing lies in the necessity of its presence in every human society despite the varying marketing processes and their integration from one society to another, and that the success of this process requires adherence to a set of rules that can be summarized as follows:

- A- Defining the target customers according to their quality and age group, as they are the market that the company deals with.
- B- Determine the types of products and services that can be provided to meet the desire and need of consumers.
- C- Getting to know the competing parties through their websites, in order to know the type of services or goods they provide, and what their prices are, with the necessity of competing with them and creating new advantages that overwhelm them.
- D- Clarify the price for each product along with the discount mechanism, if any, and the method of payment.
- E- Designing a website to attract more customers, provided that its design is successful and attractive, and there is no objection to seeking the help of experts and successful websites to identify them.
- F- The necessity of following up on the site to ensure communication with customers and consumers, fulfilling their desires and responding to their inquiries, which is an important matter as it achieves a kind of trust between the two parties that results in more profit and success.
- G- Continuously updating the site, taking care to use simple sites that do not require more time, and that their outward appearance in relation to the work is uncomplicated and comfortable for the eye so that it is easy to deal with. Also, using the Internet and many websites requires the presence of a set of words that customers are likely to use when searching for products, and it is important to ensure that the site is easy to navigate, find prices, learn how to purchase products and get answers to their inquiries, using a set of keywords instead. From repeating the same keywords, content marketing is an indirect type of marketing and it involves creating and sharing online materials such as videos, blogs, and posts on social media and on websites. Which often does not explicitly and directly promote the brand but aims to motivate the audience to pay attention to its products or services.

### **Marketing development and behavior:**

Behavior includes all the activities of a living being, the interaction and reaction that emanates from the human being, such as the voluntary movements that emanate from him. Every movement that he performs, whether that we feel or that we do not feel, (such as the heartbeat and the movement of the stomach) is an involuntary behavior. Also, mental activities, imagination, breathing, dreaming and sensations are all types of behavior. Likewise, speech and what it includes, such as shouting and pointing, are types of behavior. Thus, from other actions that show a person's voluntary activity what he emits, and thus human behavior is described as a total system composed of three important aspects:

- 1- The cognitive aspect (mental): related to understanding, perception, visualization, imagination, and everything related to mental processes.
- 2- Emotional aspect: It includes sensations and feelings such as joy, sadness and anxiety.
- 3- Movement aspect: It includes what a person makes of movements or words, such as standing, sitting, smiling, crying or screaming. Therefore, human behavior can be considered the outcome of the interaction between the characteristics of the individual and the nature of the situation in which he lives. His audio-visual devices are deliberately concerned with their implementation, and that the neural responses that are formed in a person are in response to the various things that surrounding him, That is, the response is formed by its action and on its basis, whether these influences are natural or social influences, and it is obvious that without such contexts, the neural response would not be

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formed, as each stimulus has its own response that is formed through specific and fixed stages, which is often expressed as a product of human interaction with the surrounding environment. Which all represent the natural and social environment surrounding the human being, because the human brain response is nothing but a live reflection of the events or the formation of behavior, so the behavior is a display of internal psychological processes and conflicts.

Human behavior is, in fact, a process of confronting man in the various situations that he has to coexist with. Therefore, the development of behavior must aim at changing the structure of the human being as he belongs to a society with its various dimensions to enjoy a decent life to elevate him in society and move him from a stable situation to a higher and better situation, And the good it reaches for exploiting the energies that are available to it,22 and improving the economic, social and cultural conditions in the local communities and contributing to their progress in the best possible way, as human knowledge increased and his need to learn about the cultures of the world intensified, and he began to search for goods and services that he use. The advanced means helped him to rush to satisfy his desires, and manufacturers began working on developing their understanding of the needs and requirements of customers and consumers, and then developing their products in line with those needs of consumers. With the increase in competition and the development of the commercial market daily, it prompted producers to search for new technologies to display, distribute, market and promote their products, and the mechanisms developed to the extent that they reached every product, destination and company to do their best in order to convince the consumer to buy the product or service, The world is moving towards digital technology for all aspects of life, and the technology of social networking sites and their use simply have become the easiest and fastest way to reduce distances and make the world a small village gathered in one platform, marketing services of all kinds, means of communication between consumers became easier As the Internet and many advanced social networking sites have provided the advantages of digital marketing, as the means of digital payment vary, such as the operating system that accepts ATM cards, credit cards and digital wallets alike, and through the above, development can summarize its role in the life of the consumer as follows:

- 1- Development is a comprehensive and continuous process.
- 2- Development is a process of change and transfer of society for the better while benefiting from the change.
- 3-Development aims at doubling the internal resources and capabilities of society. The result will be a consumer armed with a huge amount of information and knowledge thanks to technology and able to communicate at any time and place, and no obstacles will stand in his way, because development is an integrated and comprehensive process for all aspects of life, which is based on controlling the volume and quality of material and human resources available to access it and to maximum exploitation.

#### **Indicators of the theoretical framework:**

- 1- This marketing idea is integrated as it begins with an idea presented by the advertising company.
- 2- The importance of marketing lies in the necessity of its presence in every human society despite the different marketing processes and their integration from one society to another.
- 3- Any successful website must include clear statements issued to consumers urging them to take the necessary action.
- 4- The importance of ensuring ease of navigation on the site, finding prices, knowing how to purchase products, and getting answers to their inquiries.
- 5- Use a set of keywords instead of repeating the same keywords.
- 6- Human behavior is the outcome of the interaction between the characteristics of the individual and the nature of the situation in which he lives.
- 7- The human brain response is nothing but a live reflection of the events or formation of behavior.
- 8- The increase in competition and the development of the commercial market on a daily basis, prompting producers to search for new technologies to display, distribute, market and promote their products, and the development of mechanisms.

### **Chapter Three / Research Procedures:**

Research Methodology: The researcher has adopted the descriptive analytical method, as it is one of the most appropriate methods

- Research community: The current research community consists of advertisements published on the

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Internet of the company (Apple) for electronic devices, as it reached (150 advertisements), and 120 of them were excluded, according to the following justifications:

- 1- Most of them are similar in presenting the advertising idea.
  - 2- The lack of diversity in it.
  - 3- Repetition in publishing a type of advertisement for successive years.
  - 4- The presence of one character in the design dominated most of the ads.
- Research sample: the research sample was chosen in an intentional way, as the number of sample samples was (3) models for the purposes of analysis from the research community of (30) advertisements from the total community, and that the percentage was 10% and its selection was in line with achieving the goal of the research.

The research tool: the theoretical framework indicators were relied upon in analyzing the research models.



### Model (1)

Ad name: Detailed ads for apple

Year: 1978

Colors used: (dark yellow, black and shades of gray)

General Description :

The advertising design relied on the distribution of written texts largely and reliance on two forms, the first occupies the upper part in the form of a computer from the advertising space, and the second form represented by the company's logo in the corresponding part at the bottom. The entire advertisement space was also surrounded by a frame in the form of a line, the thickness of which does not exceed (1) cm.



شعار شركة apple

Analysis: At first glance, it appears the era in which the design was completed, as the designer was able to use simple design means available in which technology based on manual design technology was used in most cases, and it is nothing but a collection of written texts that are assembled and the preparation of common templates used in printing Alterpress and drawings Which was represented in the shape of the logo is a picture of Newton under the apple tree, which was circulated as the company's logo from 1976 until 1977, Which shows a lot of details that make it a complex logo, and it does not have a semantic relationship directly to the name of the company because it includes schematic images drawn of Newton sitting under the apple tree, and the photograph that has a black value without there being details that show the shape of the computer, because Printing technology is expensive in the first place, in addition to the lack of this technology for many of the advantages required to show the printed, so we find that it is devoid of details and colors that could help highlight the shapes that were employed in the design and printing of the advertisement.



### Model (2)

Ad name: Detailed announcement about the advantages apple company

Year: 1980

Colors used (multiple color combination as well as black luminous value

General Description: The advertisement design included large titles and a set of written text lines in the form of two parallel columns. Two images also appeared, the first in the upper part of the ad space and the other occupied the lower part. Also, the company's logo was employed, which appears in a range of colors.

Analysis: The advertisement design relied on a change in the distribution of the design elements, as the large titles that formed a large part of the space of the advertisement space appeared, and in the light value of blackness that was used in print during the eighties and earlier. However, what distinguishes the advertisement is its reliance on technology and its clear development through the presence of images with clear details, as well as the amount of colors that were employed both in the images or the company logo that the painter (Rob Janoff) designed, which is a colorful bitten apple. He explained that these colors were intended to make the logo easier and more distinctive. Indeed, the radical change was the development of technology in the design of the logo, which was the official logo that continued from 1977 until 1998, As the design and printing of a logo in a large number of colors, technology entered into its production and development, as well as the accuracy of details in the production of the lights that were employed and in which color sorting techniques were used to prepare the printing surfaces. Also, the technology of the development of advertising production appears through the silhouettes in the images that were employed and in which the silhouette net and the printing camera were used, from here we can determine the big and clear breakthrough of technology, both at the level of design, the selection of design elements and the method of employment and strengthening that with printing that constituted a change in the company's advertising.

### Model (3)

Ad name: Detailed announcement about the advantages of apple company

Year: 2022

Colors used: many different colors

General Description: The advertisement design was embodied based on the square geometric shape with its curved borders, which included all the services and applications that can be obtained from the phone (iPhone) that appeared implicit in the advertisement space, as well as written texts represented by the phrase (Thank you a billion) below the shape of the phone, followed by a written line and then The company logo with the name of the new version of the phone followed by a very precise written line of small size.

Analysis: The advertisement is distinguished from the ordinary advertisements, in the change in form and content and the extent of the impact of digital technology when it enters into the design, printing and publishing this advertisement. From the first moment of seeing the advertisement, it comes to mind that there are advantages that have occurred in the company's production and there are new services offered by the company, and here the consumer is ready to receive the content of the advertisement because he is looking for new and different, and this was in the way of offering applications produced by digital technology on the level of phone production (iPhone) And what it contains of applications that cross a billion, as in the phrase that ran under the shape of the phone

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(Thank you a billion) and what was reinforced in confirming that written line whose content shows the extent of the benefit that the consumer can had from this phone and the applications it carries, The company's logo changed with the advent of digital technology, which brought about the great revolution in the field of electronic technologies and devices. The color of the logo has changed to become the apple with black optical value since 2003. The logo's color change is the logo that continues until now. The great impact of digital technology, which cast a shadow on the design, implementation, and methods of spreading advertising on all means of communication, appears because it has become an available and easy-to-use technology. This type of advertisement can be published in newspapers, magazines, television channels, and all means of communication. What helps in this is the great development in the Internet, which has brought the distances closer and made it possible for the consumer to buy and sell and acquire all his needs and requirements, and saved him effort and time in the searches for his needs, So technology has provided a great service to the consumer to a degree that no other means in the field of marketing has provided.

## Results

- 1- The printing technology was expensive in the first place, in addition to the lack of this technology for many of the advantages required to show the print, as in the models (1, 2)
- 2- The entry of technology into the design and printing of the logo with a large number of colors appeared to play a role in its production and development, as well as the accuracy of details in the production of the images that were employed and in which color sorting techniques were used to prepare the printing surfaces, as in the models (2,3).
- 3- The development of technology in advertising production appears through the shaded degrees in the images that were employed and in which the shadow net and the printing camera were used. It is clear as in the models (2,3).
- 4- Distinguish the extent of the development of printing technology in terms of the shape of letters and the multiplicity of their types as well as the multiplicity of colors and the change of written texts. As in all models.
- 5- Advertising production technology has adopted the employment of simplified forms within a design space, which makes the consumer contemplate and focus on the form of the material contained in the subject of the advertisement, distinguishing it with brevity and determining what the advertisement carries of the product, as in Model (3).
- 6- The change in form and content and the extent of the impact of digital technology when it enters into the design and printing of advertisements, as in the models (2,3), is evident.
- 7- The technology provided a great service to the consumer to a degree that no other means in the field of marketing provided, and the acquisition of all his needs and requirements and saved him the effort and time in the searches the objects, as in model (3).

## Conclusions

- 1 - Technology has provided design and printing a great service over the course of its development, because it has provided complex capabilities in design and printing in simplified ways, because without technology it would have been difficult to obtain.
- 2- Technology has provided applications that include multiple options that the designer needs to accomplish and put forward design ideas.
- 3- The technology cast a shadow over all types of consumers and did not distinguish between one group or another or one society and another, but rather it was a comprehensive marketing method for all products and services, which made the consumer follow and deal with them.

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