

دور التطبيقات الرقمية التفاعلية في تصميم أجنحة العرض الاعلانية من المنظور الاقتصادي

The role of interactive digital applications in the design of advertising display booth from an economic perspective

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Research introduction:

Many technologies and terminology emerged that became the product of that period, which was filled with many ways of presenting information and methods of acquiring data, including in the differences of experiences, cultures, and levels of education, as well as activating the role of the user in participating mainly in those applications, and even making him the focus of design and development to the point that everyone seeks to serve his requirements and purposes, in addition to improving the level of service. Among the most important and most recent applications of that period are applications that focused on interactivity, virtual reality, and holograms. Their use has expanded recently in many fields that are closely related to providing services that are directly related to the audience of recipients all over the world. It has become a modern approach that many major institutions and systems are heading towards. The exchange of information in the multimedia era is no longer limited to sending and receiving the same information. Rather, individuals communicate with each other through audio, video, and even virtual presence together in the same environment. Interactive multimedia applications have appeared through the Internet on its pages and through websites that are full of many forms of media. Interactive multimedia that creates, through its virtual world, an interactive mediator between Internet users, whether customers or owners of services, goods or products.

The tremendous digital development has led to the development of multiple applications aimed at engaging the recipient in unique experiences that attract him to the product or service and then the brand. Perhaps the most prominent modern digital applications are applications based on virtual reality, hologram applications, and interactive applications, which are among the most important and complex systems whose application requires many in-depth studies in many fields. The design of advertising display stands is one of the advertising fields that deal directly with the recipient through direct communication, which aims to provide the recipient with dense and focused information about the product or service and then the brand in an attractive and likable way. The philosophy of designing advertising display stand systems depends on establishing the mental image and identity. Visual representation of the brand, while employing the skills of the communicator to achieve constructive completion of the design philosophy based on the brand identity. While the process of teaching advertising design at the present time is focused on making the most of the applications of modern digital technology in advertising design processes.

Research problem:

The research problem lies in the need to activate the benefit of employing modern digital technologies in the design of advertising display stands in Egypt, taking into account the economic aspect over the long life of the display stands.

Search goal:

This research aims to monitor the impact of modern digital applications on enriching the design of advertising display stands from an economic perspective, while conducting an applied study on students of the Faculty of Applied Arts at Benha University.

Research Methodology:

The research follows the descriptive method.

Research axes:

The research is divided into three main axes as follows:

The first axis: Designing mobile advertising display stands from an economic perspective.

The second axis: Employing modern digital applications in the exhibition pavilions.

The third axis: An applied study on (display windows subject 2) for fourth year students in the Department of Advertising, Printing and Publishing at the Faculty of Applied Arts, Benha University.

First: Designing mobile advertising display stands from an economic perspective

1/ The concept and characteristics of exhibition stands based on digital technologies

Well-organized display stands provide an ideal environment for the sales process, especially for sales professionals. Exhibition pavilions leave the most profound visual impressions. When participating in one of the exhibition pavilions, visitors see everything your company represents depicted in this pavilion. They see its product differentiation, its workers, its philosophy, and its products. Through it, they can determine the employees' friendliness, desire, and service in dealing with customers. There is no other way for the customer to get all of these things at once, and even a visit to the factory or company will not achieve this. (John Appleyard: 2008)

There are many design specifications for exhibition stands, which can be explained in the following points:

1. Determine the purpose of holding the exhibition and achieve it through the exhibition stand, whether the goal is "commercial - tourism - advertising...etc."
2. Determine the type of exhibition visitors: "Determine the target audience (in terms of age group - social level - cultural level - profession...etc.)."
3. Simplicity and clarity of the advertising idea in the design of exhibition stands.
4. Use various complementary advertising methods that are understandable, short, easy to access, and clear to the recipient.
5. Choosing the appropriate place to set up the exhibition pavilions in terms of (ventilation - lighting - location - space - visibility - smooth accessibility).
6. Organizing the exhibits in a simple way, taking into account the appropriate distance between the exhibits and between them and the visitor, taking into account the visitor's line of movement.
7. Pay attention to the general formal design, taking into account the consistency of colors, sizes, and textures. (Siham Hassan: 2015)

The technologies have been expanded to provide alternative options for engaging with information and to meet the various demands of audiences and the desire to guide visitors visually to and through the exhibition in light of the ergonomic, interactive and digital strategies, which aim to achieve a physically comfortable exhibition pavilion with an overall design orientation. The ergonomic characteristics of exhibition pavilions based on digital technologies can be demonstrated as follows: -

- Good design of exhibition stands based on digital technologies enables visitors to be guided and informed about the exhibition visually, favoring comfort and clarity with minimal burden by checking how visitors are directed to the exhibition, providing the required information “without interfering” only with interactive art and exploring visual cues instead of texts.
- The design of exhibition stands based on digital technologies is physically ergonomic so that stress is minimized for visitors and users, while ensuring that the dimensions are comfortable for the audience.

Second: Employing modern digital applications in the exhibition pavilions

2/1 Touch technologies

2/1/1 Direct touch display methods

The use of direct touch technology in our daily life is always present, people who do not have a touch screen are only a few. The touch screen is designed for easy operation and time saving as it is an assistive technology. This interface can be useful to those who have difficulty using other input devices such as a mouse or keyboard, and it can make computing resources more available to people who have difficulty using computers. Touch screen is a widely used emerging technology that is sensitive to human touch, allowing the user to interact with the computer by touching images or words on the screen. It provides a very good user interface with applications that normally require a mouse. The touch screen interface has revolutionized interactive electronic devices in a big way. (2020: Sathyan, Anu & L C, Manikandan)

There is no doubt that touch-based displays have become a reality in many areas of our daily lives, such as means of displaying information in exhibition stands, state government agencies, and screens in public stores. Currently, there are screens in which writing pens are used by touching the surface of the screen.

Touch display devices consist of the following components:

A - Touch Sensor, which generates an electric field with extreme precision in the place where it is directly pressed.

B - The Touch Controller card, which directs the signals input by touch to translate and transfer them to the brain of the processing device (usually via the USB cable input).

C- Display Software Driver, which is used to prepare the screen and run the program. (Siham Hassan: 2021)

According to ergonomics, the location of the touch screen in the display wings should allow the user to view and access the screen surface comfortably and without stress in various situations. The user must be able to operate the monitor with the upper arms in a neutral position, next to the torso. Raising the upper arm above the torso to operate a touch screen may be too high and can cause musculoskeletal discomfort with prolonged use, which may result in injury. Also, a touch screen that is too low makes operators tend to press forward, possibly injuring the lumbar spine. (Melanie Swann: 2006)

Although the need for a height-adjustable screen surface can be difficult from a design standpoint, as it depends on the nature and diversity of the people using it, as well as the job and tasks assigned to it, and the number of people using the same screen. Lowering the screen surface or raising it can cause a slight defect in vision or distortion. Viewing angle is a key factor when placing the monitor. Some touch screens may blur or distort images when viewed from angles greater than 15 to 20 degrees upwards or from the sides. Deformities can be imperceptible, and one may not be aware of these deformities with the naked eye. It is important to locate the screen so that the ambient light does not cause any reflection on the screen surface, as this will cause visual difficulties. (Ivan Burmistrov: 2015)

2/1/2 Display methods using touch light technology:

With LED as lighting, a new era of dealing with lighting has dawned. Digitization, light guidance and light quality take on greater importance. This is based on the principle that the physical and emotional effects of light on humans have become common topics in the daily life of the modern digital society. The amount of light that determines the nature of spaces is increasing in intensity, especially with the development of the use of digital devices and their increasing spread. (2017: Appelt, Siegrun)

Touch Light technology is a technology invented by Microsoft that embodies shapes in a virtual three-dimensional way, with the visible object at a distance from the surface of the display screen, and then allows the user to control its movement and rotation around its axis.

Kinect's optical projection remote control technology is used to create spatial augmented reality, allowing users to create a projected virtual environment on irregular surfaces. Which requires a precise calibration process for the camera and projector in order to produce accurate 3D information to match the movement of the real object. The data obtained from calibrating the Kinect Projector system is processed into visualization applications, allowing the user to create an augmented reality environment while maintaining accurate calibration of light projection on irregular surfaces. (Motta, Thiago et al., 2014)

2/2/2 Hologram technologies:

This technology is based on the idea of multiple light projection using a projector connected to a computer that is pre-equipped with everything that will be displayed in the exhibition pavilion, as it performs a light projection on high-quality reflectors that are placed in precise and calculated places on the walls and floors of the exhibition pavilion so that the projection angles are identical to the resulting reflections on the viewer's eye, which makes the resulting hologram image three-dimensional and realistic and appears inside the exhibition stand in high quality. (2015: Chavis J.)

Hologram techniques have been used in advertising events for pavilion display systems, especially in festivals and large display pavilions, by more than one major institution. Perhaps the best of these activities is what Coca-Cola carried out in 2009 in the city of Prague.