Corporate advertising: impact of investment in photorealistic three-dimensional animated technology (3D-CGI)

Publicidad empresarial: impacto de la inversión en tecnología animada tridimensional foto realística (3D-CGI)

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Abstract

In the area of graphic design and advertising in business the importance of designing with high- quality graphic materials will maintain the corporate image and corporate identity in the minds of current and potential consumer. This research is related to the impact of investment in 3D animations in the field of advertising and graphic design. Interviews with expert professionals from advertising agencies in Puerto Rico were evaluated with the use of 3D animation to create television commercials both in Puerto Rico and other countries. A related comparative are illustrated with commercials: M & M's, Orangina, Church's Chicken and Chocolate Cortés; transmitted in different time periods in Puerto Rico and other countries.

Advertising, Business, Investment impact

Resumen

En el ámbito del diseño gráfico y la publicidad en las empresas, la importancia de diseñar con materiales gráficos de alta calidad mantendrá la imagen corporativa y la identidad empresarial en la mente del consumidor actual y potencial. Esta investigación está relacionada con el impacto de la inversión en animaciones 3D en el campo de la publicidad y el diseño gráfico. Se evaluaron entrevistas con profesionales expertos de agencias de publicidad en Puerto Rico con el uso de la animación 3D para crear comerciales de televisión tanto en Puerto Rico como en otros países. Una comparativa relacionada se ilustra con los comerciales: M & M's, Orangina, Church's Chicken y Chocolate Cortés; transmitidos en diferentes periodos de tiempo en Puerto Rico y otros países.

Publicidad, Empresas, Impacto de inversión

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Introduction

In the area of graphic design and business advertising, the importance of designing high quality graphic supports to develop advertising campaigns is emphasized, in order to maintain the image and corporate identity of the company present in the minds of current and potential consumers.

For this reason, commercial brands use the largest amount of budget to develop advertising campaigns to create the need in the consumer for the product, when observing the commercial, opting to buy it by identifying with the message.

Sometimes they are attracted by: the price of the product, the advantages and benefits it offers, and the consumer's convenience in acquiring it. Therefore, it is important for advertising agencies to be efficient in influencing consumer decision making through their strategies. Creatives highlight the product or service in television commercials. Graphic designers achieve the visual effects in motion to capture the viewer's attention.

In commercials it is common to see visual elements in motion, especially the image of the logo and the product for the consumer to identify them. Thousands of people see commercials every day, however, the commercials that stand out the most are those that contain creative details that remain in the consumer's mind and, for that reason, increase sales.

Commercials with 3D technology allow images to have more dynamism [1]. Very little has been discussed about the techniques and advantages of designing with photorealistic three-dimensional (3D) animated technology (CGI) in the field of advertising to create commercial videos in Puerto Rico. There is a perception that 3D animation (CGI) is only done in Hollywood. However, these technologies can be used constantly in advertising.

Commercials with three-dimensional technology is a very demanding discipline and is constantly changing. This is because technology renews the working tools to speed up the process of creating images on the computer.

Graphic designers must keep up with this new technology in order to effectively respond to the growing demand for developing the corporate identity of commercial companies. Commercials with 3D animated technology (CGI) are gaining importance in the advertising industry in countries such as the United States and Europe, where it has become an investment of resources.

Literature review

The presentation of an animated product enhances consumer trust towards the animated brand and increases the likelihood of choosing the product [2]. 3D technology creates a sense of reality that motivates to receive the message conveyed [3].

According to the American Association of Advertising Agencies, the average cost of producing a national television commercial is $358,000. Visual effects companies, agencies and directors are embracing the image-based philosophy, thanks in part to 3D technology that allows creatives to realize their artistic visions. The commercials look wonderful, they look visually exciting, and digital technology has a lot to do with it [4].

The advantages of CGI should be taken from the film industry and applied to print advertising [3]. In addition, the development of 3D programmatic innovations that are specifically for the print advertising industry. Applying 3D animated technology in these commercials allows the creation of high quality visual effects, thus attracting the viewer's attention. The dynamism created by 3D effects allows adding more details to the visual elements [1].

3D experts claim that these technologies are necessary to enhance corporate image. Mascot characters are created to attract the public's attention and in this way the viewer buys your product. Each character has a unique characteristic and appeals to the market in which it is advertised [5].

Consumers feel a sense of presence when interacting with 3D products [6]. The virtual experience, simulated with 3D advertising, is composed of cognitive and affective activities than 2D marketing messages [7,8].

These psychological and emotional effects are attributed to the interface properties of 3D advertising, as well as the psychological sensation of presence [8]. Product visualization in 3D technology has emerged as a new way of enriching the advertising medium capable of allowing consumers to interact with a virtual product in a manner similar to a physical product [9].

Methodology

This research is qualitative: exploratory and descriptive. For the study, the strategy used was the interview of individuals from advertising agencies in Puerto Rico that make 3D (CGI) commercials, and the observation of commercials (2D and 3D "Computer Generated Imagery" with realism) made by one or different advertising companies for later comparison.

As for the population that answered or participated in the interview, they were advertisers making television commercials in Puerto Rico. The dependent variables were: the field of advertising and the field of graphic design at the corporate level. The independent variable was: three-dimensional (3D) animated technology (CGI).

The primary source of information was provided by www.superpagespr.com of Puerto Rico. A convenience sample of advertisers was selected from this list to be interviewed. This sampling method is defined as a non-probabilistic sampling (the sample has not been randomly selected) that is selected for its availability to the researcher [10].

The advertisers answered a series of questions aimed at measuring the degree of understanding they have about the techniques and advantages of using 3D (CGI) as well as measuring their degree of satisfaction with this technology. Through these interviews, the impact of three-dimensional technology in the field of advertising to create commercial videos in Puerto Rico was analyzed.

From the population of 216 advertising agencies in Puerto Rico, according to the information provided by www.superpagespr.com, 10 leading representatives of these agencies agreed to participate in the study. These 10 representatives were the sample (convenience, non-probabilistic) used for this research.

As a secondary source of data collection, television commercials shown in Puerto Rico and in other countries of recognized brands were identified for comparison; and the necessary documentation and guidance on the subject was used. The images were obtained, for the most part, through the web page known as www.youtube.com. The two formats that were analyzed were: the traditional form of 2D advertising such as: video captures, composition of graphic elements, composition of 3D objects (CGI) in a 2D scenario and the use of 3D (CGI) with realism.

The use of 2D graphics and 3D technology (CGI) in television commercials was compared. Later on, as an example, the comparison related to the commercials of: M&M's, Orangina, Church's Chicken and Chocolate Cortés; transmitted in different periods of time in Puerto Rico as well as in other countries, is illustrated as an example.

The following was established as a hypothesis of this research: Advertising agencies will invest more in technological resources such as 3D animations (CGI) to create increasingly creative and eye-catching ads. This will have a better impact on the viewer consumer, increasing his or her subsequent preference for the brand and increasing the possibility of choosing the advertised product.

The guiding questions for this research were as follows:

- Will it be cost effective to create commercials with 3D animated technology (CGI)?

- Will 3D (CGI) animations captivate the consumer compared to traditional commercials?

- Why do 3D (CGI) animations attract more attention than 2D video commercials?

- Why don't advertising agencies often create realistic 3D (CGI) animations?

- What elements are necessary to create realistic quality 3D (CGI) commercials?

- Will creating 3D CGI technology alone increase sales for existing brands?

- What tools are needed to create 3D CGI visual effects?

- How long will it take to create a 30-second commercial made entirely in 3D (CGI)?

Findings

The sample participants who agreed to be interviewed were 100% male. Figure 1 shows the ages of the interviewees. Regarding academic preparation, the highest percentage was 20% who indicated having a bachelor's degree in communications, 10% a Bachelor's Degree in Graphic Arts and another 10% a Master's Degree in Digital Graphic Arts.

The rest of the interviewees indicated having different bachelor's and/or master's degrees. For example, in areas such as: Architecture, Anthropology, Science, Business Administration, Economics, Marketing. Figure 2 presents the information on the position they hold in the advertising agencies. Figure 3 shows the length of time in the position and Figure 4 shows the length of time the company has been established in Puerto Rico.
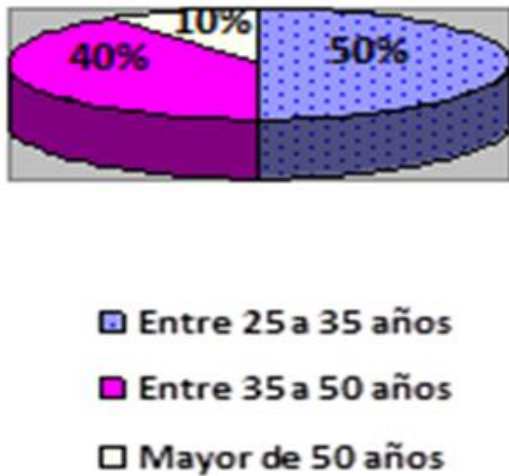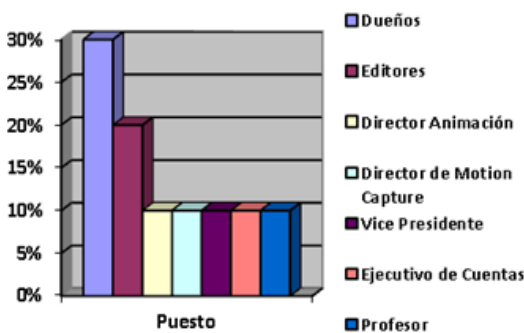

Figure 1 Ages of the interviewees

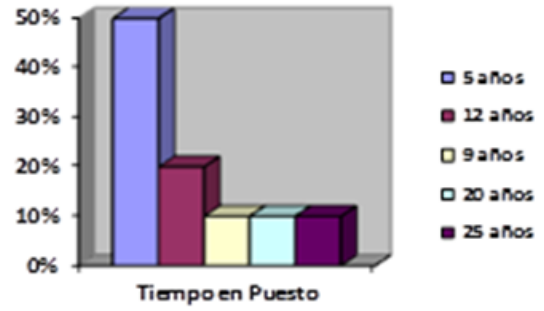**Figure 2** Position held in advertising agency
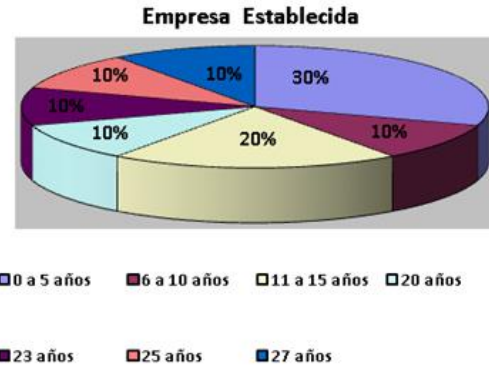

Figure 3 Time in the position

Figure 4 Company established in Puerto Rico

Asked in which department he/she works within the company. 20% marked working in the advertising department, 10% in the graphic department, 10% in the graphic and creative department, 10% in the creative department, 10% in the creative department and Production Director, 10% Account Executive, 10% Account Owner and Account Executive, 10% in the Graphic, Creative and Faculty Department.

One of the participants checked all the alternatives. Figure 5 shows how long they have been working with 3D animations (CGI) to achieve the visual effects. Figure 6 reflects whether it is cost effective to create commercials with 3D animated technology (CGI).

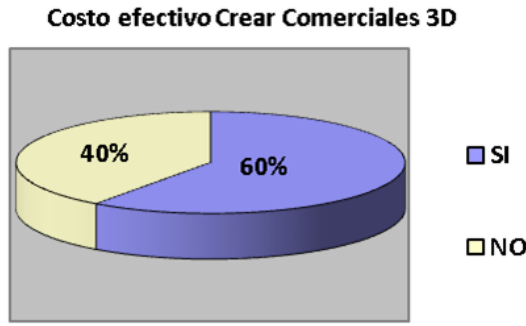**Figure 5** Years working with 3D animations

Figure 6 Cost-effectiveness of creating 3D commercials

The results of the questionnaire showed that 60% of respondents believe that it would be cost-effective to create commercials with 3D animated technology (CGI).

Some of those who indicated in the affirmative accompanied their selection with various opinions. Among these are: "it depends on the client's tastes and the concept of the story", "more creativity", "the filming area would not be needed", "higher production quality", "it depends on the quality desired by the client", "the tool can be complementary for product marketing purposes".

Figure 7 displays whether 3D animations will captivate the consumer and Figure 8 is about whether 3D animated technology would help increase sales of existing brands.
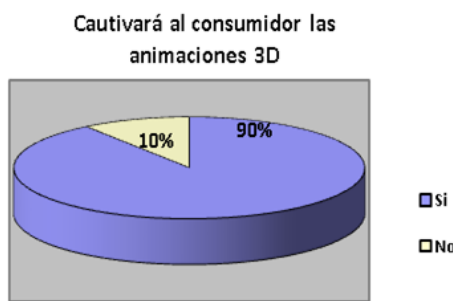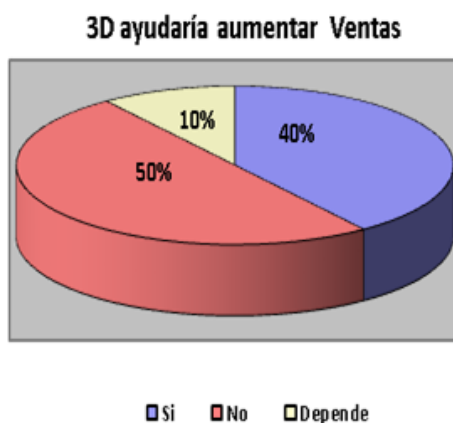

Figure 7 3D Animations (CGI)

Figure 8 3D Animations

90% considered that 3D animations (CGI) could better captivate the consumer compared to traditional commercials.

Among the comments were: "with 3D tools (CGI) you vary the content of the commercial", "it is more attractive", "it will depend on the Target, but generally it will captivate young people more", "3D commercial videos are well done mainly those produced in South America", "3D commercials you can add very nice elements to the concept, integrating the 3D character (CGI) within the filming, interacting with the child, it is innovative", "it creates real effects, allowing to move what is presented as if the person was there, wishing then to acquire it", "3D allows dynamics to the product and is eye-catching, it simulates reality".

On whether 3D animated technology would help increase sales of existing brands, 50% said NO, 40% said YES and 10% said it depends. Among those who said NO, the following were noted: "the increase in sales is due to the history of the brand and not in the way of production", "there is no link, it does not attribute the creative element but depends on the well-developed concept".

Among those who said yes, they said: "Yes, it would help to increase sales because it enhances the brand, offers more information and elements than regular commercials". The person who said it depends said: "It all depends on the message you bring to the market. If the market is children, it is effective to use 3D commercials to attract children to the advertised product".

According to the information gathered from the interviews, currently, most of the advertising agencies interviewed are not producing 3D (CGI) commercials in Puerto Rico but are producing them in other countries.

Advertising agencies are not often creating realistic 3D (CGI) animations because of the budget allocated and because they are not yet open to experiment with 3D (CGI). It seems a contradiction that advertising agencies recognize that they need to invest in 3D CGI resources and computer equipment to better captivate the consumer, but due to the economic factors of their clients' budgets some prefer to continue using live productions.

However, the results of the questionnaire cannot be generalized to advertising agencies, as information could only be collected from 10 agencies.

The most used tools were: 3D Studio Max, Maya and Light Wave 3D. They were asked if with the tools they currently have, if they were able to create TV commercials related to 3D in less time. 50% said yes, 30% said no, 10% said it depends and 10% did not answer the question.

The elements they considered most necessary to create 3D commercials (CGI) of realistic quality were: drawn sketches and global illumination. The programs most used were: After Effects, Premier and Final Cut. Most of the video editors and 3D (CGI) animators interviewed are business owners.

The interviewees expressed that a 30-second commercial made with 3D (CGI) technology takes them between 3 weeks to 3 months to create. Most of them expressed that they have all the necessary tools to create 3D (CGI) commercials faster.

Among the objectives of this research was to compare the use of 2D and 3D (CGI) graphic resources in the field of advertising and to explore what is being done in the advertising world related to 3D (CGI) animations to create television commercials both in Puerto Rico and in other countries.

Among the various comparisons made in this research on commercials made in Puerto Rico and in other countries, the following is a comparison related to the commercials of: M&M's, Orangina, Church's Chicken and Chocolate Cortés; transmitted in different periods of time in Puerto Rico and in other countries.

Figure 8 M&M's commercials are characterized by their creative images of chocolate.

Figure 9 Commercial for the product Orangina, made in France.

Figure 10 The composition of the Church "s Chiken character in 3D (CGI) within a 2D scenario

Figure 11 The 1980s" Chocolate Cortés commercial

Discussion, implications and contribution

In the area of graphic design and business advertising, the importance of designing high quality graphic art and corporate identity for commercial brands is emphasized. It is important that when developing advertising campaigns, the content of the campaign allows to maintain the corporate image of the business client in the mind of the current and potential consumer.

Tools such as 3D animations (CGI) can be used to achieve this purpose, since graphic designers, through visual effects in motion, capture the viewer's attention on the logo and the product. The commercials that stand out the most are those that contain creative details that remain in the consumer's mind.

Commercials with 3D animated technology (CGI) are gaining importance within the advertising industry. Renowned brands such as Coca Cola®, M&M "s®, Pillsbury®, Tostitos®, among others are increasingly investing in 3D animated CGI advertising campaigns achieving corporate identity success; substantial profits and increased consumer loyalty.

3D animated technologies (CGI) allow characters to have more freedom of possibilities in interacting with real people in commercials. In addition, the creation of characters is being used to keep the brand alive. Characters can allow to create a better expectation in consumers about the qualities of the product and make each person identify with some 3D (CGI) character. Consumers would be feeling a sense of presence when interacting with 3D (CGI) products.

3D (CGI) animations carry a more compelling message compared to 2D animations. There are psychology studies that show that 3D commercials reach the viewer's subconscious more because of the realistic graphics they expose [11].

3D (CGI) advertising is a means of communication to create an atmosphere of presence and intensity when product information is given. One of the most important parts of advertising is to be able to inform the public about the benefits of the products they advertise, thus creating a visual image to the viewer.

To achieve the simulation of reality, it is required that the 3D animator (CGI) has the necessary experience to create the necessary visual effects on par with the needs of the advertising agency.

Commercial videos made in Puerto Rico are generally achieved using 2D technology. Videos are captured and digital visual effects are added to communicate emotions and thus motivate the viewer to buy the product.

In conclusion, when 3D animations (CGI) are used for TV commercials, a lot of creativity is being invested. It is the most imaginative way to express movement and color to retain consumers. It is also found that 3D visuals (CGI) improve viewer perception in commercials aimed at the right market, as expressed by interviewees. It is important to note that according to the interviewees' statements, the use of 3D CGI depends on the particular type of market desired; be it children, youth or adults.

The message to be conveyed will depend on how effectively the necessary elements are applied to the viewer's audience. Comparing 2D and 3D (CGI) commercials, we find that it all depends on what message is being communicated. In the case of commercials for children, creating a 3D (CGI) character of a child makes a good impact. Combining colors and eye-catching shapes for children motivates them to remember the commercial and thus influences them to buy the product later on.

Recommendations

Design itself is linked to visual elements that affect the way commercials are created. In the area of graphic design, it is imperative to learn all the disciplines necessary to meet the demand to create increasingly creative ads.

Based on this exploratory study, we understand that advertising agencies must invest more in technological resources such as 3D animations (CGI) to create increasingly creative and eye-catching ads. The advertising industry needs to become less conformist towards creative advertising through 3D animated technology (CGI).

One of the recommendations is to investigate the impact of 3D animations (CGI) on children's education. In addition to studying how children are influenced to learn with traditional methods of education such as books and explanations versus presenting them with educational 3D animated CGI videos. Whether it is seeing characters in an educational adventure or visuals of dynamic elements.

References

Biocca, F.: Cyborg's dilemma: Progressive embodiment in virtual environments. Journal of Computer Mediated Communication, vol. 3, no.2. Recopilado de http://www. ascusc.org /jcmc/vol3/issue2/biocca2.html (1997).

Biocca, F.: Virtual reality technology: A tutorial. Journal of Communication, vol. 42, no. 4, pp. 23. Recopilado de Communication & Mass Media Complete database (1992).

Bryman, A. & Bell, E.: Business Research Methods. Oxford University Press Inc, New York. pp. 1- 28 (2003).

Daugherty, T., Li, H., & Biocca, F.: Consumer Learning and the Effects of Virtual Experience: Relative to Indirect and Direct Product Experience. Psychology & Marketing, vol. 25, no.7, pp. 568-586 (2008).

Doyle, A.: New Age Ads. Computer Graphics World. Penn Well Publishing Co, pp.1-6 (2003). Fasolo, B.: Animation Attracts: The Attraction Effect in an On-line Shopping Environment. London School of Economics and Political Science, Psychology & Marketing, vol. 23, no. 10, pp. 799-811 (2006).

Li,H., Daugherty, T. & Biocca, F.: Impact 3D advertising on product knowledge, brand attitude purchase intention: The Mediating Role of Presence. The Journal of Advertising, pp. 43-55. Sharpe Inc. (2002, Fall).

Li,H., Daugherty, T. & Biocca, F.: The role of virtual experience in consumer learning. Lawrence Erlbaum Associates, Inc,. vol. 13, no.4, pp. 395–407 (2001, 2003).

Moldstad, F.: All nail the renaissance: artists are reaping the best of both worlds by combining 3D imagery and photography. Computer Graphics World, pp.70-72 (August, 2008).

Moltenbrey, K.: Modern clasics: digital technology breathes new life into nostalgic commercial characters. Computer Graphics World, pp. 28-34 (July, 2002).

Moltenbrey, K.: Spotlight: 2D animation: Line of Comunication. Computer Graphics World, pp. 10-12 (October, 2006).