

Research on the application of computer digital information technology in visual communication design during processing

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Abstract. As an indispensable and important part of people's life, visual communication design is increasingly prominent in contemporary design. Through the thinking and research of visual communication design in the era of computer digital information technology, this paper proposes corresponding algorithms and programs. This method can improve the ability of designers to maintain keen design thinking and design innovation. Finally, the visual communication in this paper In the future, the design will gradually develop in the direction of multi-disciplinary integration and comprehensive development.

Keywords: Computer digitization, Information technology, Visual communication design, Application.

1. Introduction

Digital technology combines sound, pictures and text, and uses multimedia computers to convert information into binary numbers, and then identify, calculate and store its content. This most basic theoretical method is the generation and development of electronic computers. Digital technology refers to sorting out all the information on the Internet, truly realizing the goal of sharing information resources around the world. Digital technology can realize the replacement of resources and provide conditions for the integration and sharing of complex resources and information [1].

1.1 Visual Communication Design

Visual communication design is the design that is communicated through vision, that is, the design that transmits information directly from the visual level. With the rapid development of modern information technology, visual communication design has gradually been applied in new fields, and its connection with the media has become closer. Such as TV advertising, outdoor advertising, graphic design, etc. [2]. All specific manifestations of visual communication design.

1.2 Visual communication design under digital information technology

The new era after the industrial age and the information age the post-information age, also known as the digital age. The technology has three main characteristics: first, the interconnection of things on a global scale; second, the diversity and individualization of human needs; third, the rapid development of information technology, which is constantly surpassed and subverted. In this era when individual characteristics are emphasized and information is highly developed, human's demand for visual experience is constantly developing, and the aesthetic orientation of visual communication products has also changed. Compared with the period of insufficient technological development, the participation of new digital technology has enabled the visual communication design to have richer materials, higher communication quality and more convenient communication methods. The opportunity of reform and innovation may make the entire visual communication design. The field of design has a new look.

2. The current situation of visual communication design under the background of computer digital information technology

In the digital environment, the development speed of digital technology has been significantly accelerated, and its advantages have continued to emerge as it matures day by day, which has injected fresh blood into the visual communication design and also played a positive role. With the continuous integration of design and technology, visual communication design has richer connotations and more diverse forms of expression, which can better meet the actual needs of the public in design in the new era. From the perspective of the digital age, while the development of visual communication design is moving to a new height, new situations and new problems are constantly emerging. It is urgent to change the status quo on the basis of analyzing and solving problems. Due to the complexity and change of the digital environment, there are many factors affecting the visual communication design. The problems of visual communication design are also reflected in many aspects. For example, some designers lack in-depth understanding of digital technology and visual communication design. See Figure 1.

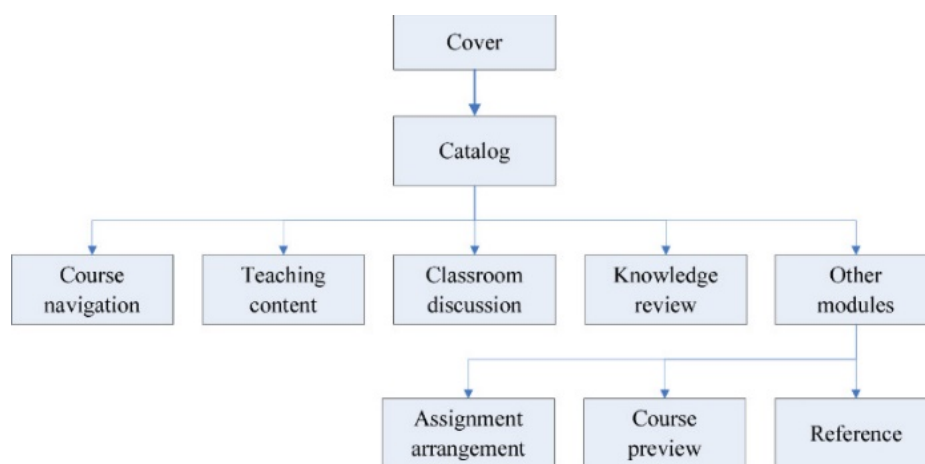


Figure 1. Computer Vision Communication Design Flowchart

The relationship between the two design is not accurately grasped, and the visual communication design relies too much on modern technology; the pattern design is becoming more and more common, which can reduce the cost of visual communication design to a certain extent and make the visual communication design more unified and standardized. There are also shortcomings. Some designers do not have a deep understanding of pattern design, and problems such as mechanized imitation occur, resulting in designs that do not have rich connotations, single expressions, lack of creativity, and no characteristics. In this environment, design materials emerge in an endless stream and are constantly being shared, resulting in misuse of design materials, resulting in designs that do not have rich connotations, and it is difficult to accurately convey the information of the works to the society. In response to this situation, we need to have a deep understanding of the current situation of visual communication design in the process of comprehensive and in-depth analysis, and at the same time, focus on the new requirements put forward in the field of visual communication design in the development of the digital age, and optimize it from different levels. innovation, effectively solve problems, and comprehensively improve the level of visual communication design.

3. The application of computer digital information technology in visual communication design during processing

In today's society with rich information resources, visual communication design is integrated with more new media forms, and the display of visual communication design is no longer limited to images and text information on traditional media, and is widely used in online and online. A variety of media channels, such as web page layout design, art design in e-commerce, user interface design in software

development, art design in game development, etc. The design content mainly includes user design, interaction design, and interface design. Compared with the previous visual communication design, the content expression form and presentation method of the visual communication design under the background of the digital age have changed in different directions. In the design process, the designer needs to carry out art design for information such as graphics and text, It is also necessary to integrate knowledge of more dimensions such as user thinking and interactive motion design existing in product experience.

3.1 Page Design and Planning

In the information page with electronic products as the communication medium, the graphic information presented on the page is the key to directly affect whether the viewer stays on the page and continues to obtain the information in depth. This can reflect the communicative nature of visual communication. Different from the traditional information dissemination media, it has changed from content as the main body to the audience as the main body. First of all, we need to consider the type of pages. Common ones include navigation-type pages, consumption-type pages, task-type pages, etc. Different types of pages have different ideas and focuses on design and layout. For example, navigation-type pages focus on user path guidance and Traffic distribution, while consumer pages focus on allowing users to browse content deeply. See Figure 2.

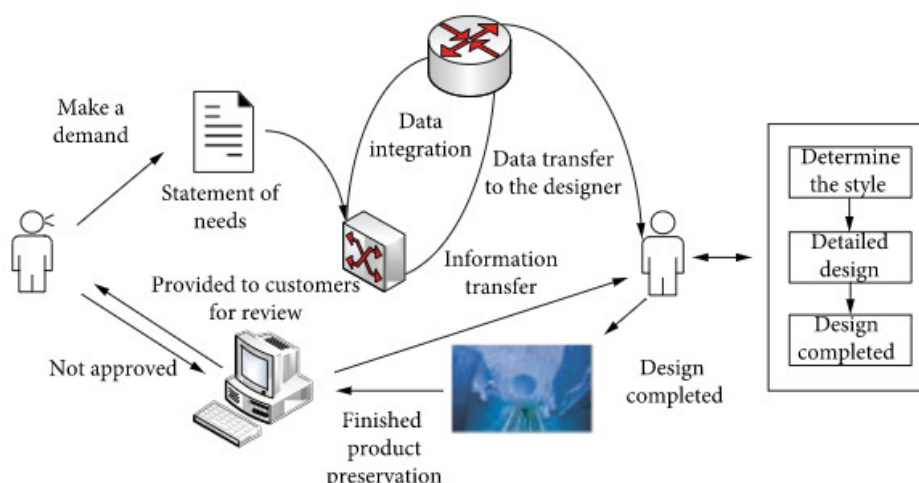


Figure 2. Visual communication design under the background of computer digital information technology

Before doing page design, designers should carry out in-depth thinking and planning: first, they must analyze market demand, locate user groups, gain insight into user needs, then establish the goal of web design, analyze similar cases, formulate design plans, and then the design scheme is implemented into the page. The main principles of web interface design must follow the general laws of visual communication, that is, the graphic information can be conveyed more clearly, accurately and effectively through artistic design, and the human-computer interaction with the software has a reasonable operation logic. It is beautiful and reflects the positioning and characteristics of the page.

3.2 Interface Design Principles

(1) It is necessary to clearly and accurately show the main business or content of this interface to visitors, what kind of interactive experience it can produce, and what problems it can solve for visitors, which helps users to use the interface more effectively and get a high-quality user experience.

(2) Precisely locate the target user, take the user as the center, and the user is the experience of the final product presented. From the user's standpoint and perspective, the design of the web page is conceived, and the common characteristics and operating habits of the target user group are comprehensively considered. The key is to design the web interface in an interface language appropriate to the target user. See Figure 3.

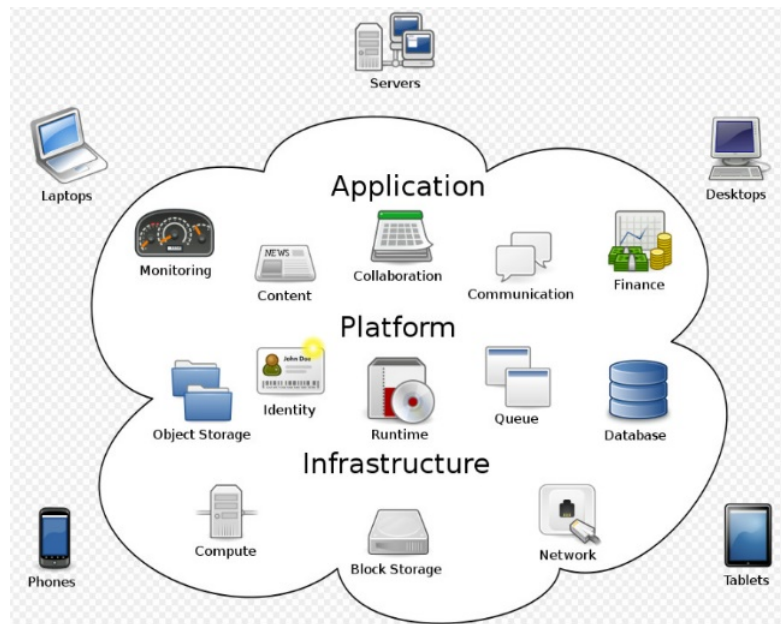


Figure 3. Computer digital information technology page interface design

(3) The sophisticated page layout and fonts help to add beauty to the page and enhance the reading experience. The layout design of the page can arrange, deconstruct and reorganize the graphics and elements according to the basic principles of plane composition in the visual communication design. The page elements and sections (titles, lists, picture information, etc.) should form a unified and orderly layout. The purpose is to Guide users to read and interact in an orderly manner according to the designer's visual prompts and logical rules. The font of the page is also a part that can reflect the beauty of the page. There are no general rules for the selection of fonts in the page design. Designers can choose and use fonts with different personalities according to the type of text, the position of the text on the page and the length of the text; for example, for important information such as titles, you can choose a relatively thick and expressive font, and a strong contrast will more easily attract the user's attention. When arranging long text information, the font is relatively calm and the font weight is relatively light, Fonts with moderate stroke thickness allow users to avoid visual fatigue when reading, which is conducive to fast reading. In addition, the safe fonts of web pages should also be considered. Not all fonts are suitable for web page output. Secondly, the output should also be kept in an orderly and beautiful state on different terminal screens.

(4) Use reasonable color matching to coordinate the consistency of page elements. Color is one of the most important elements of the visual effect of the page, which can bring users an intuitive atmosphere. Summarize the overall tone of the page, mine product attributes, and summarize the visual experience of the target user group to refine the color application of the page. The purpose is to allow users to distinguish the product on the web page from products of the same type. It can be seen that color design is helpful for attracting users, brand positioning, and image promotion.

4. Innovative development of visual communication design under the background of computer digital information technology

4.1 Break through the traditional design context

The changes in the context of visual communication design in the digital age are mainly reflected in two aspects: First, the way the public receives information has undergone tremendous changes. People are no longer satisfied with simply receiving information, but pay more attention to interacting with information. The huge impact brought by the rapid development of smart devices represented by smartphones. Especially after the rise of new media, when the public participates in the dissemination of new media information, they often interact through barrage, comments, messages,

private messages, etc. Therefore, the traditional visual design concept is no longer suitable for the needs of the development of the new era. Second, the way of visual communication has undergone earth-shaking changes, and the development from plane to multimedia, from electronic to digital processing has been rapidly realized, and the channels and ways of information dissemination have become more diversified. Enhancement, which has a non-negligible impact on the visual communication design. Under the circumstance that the traditional context is affected by the digital age and has made a breakthrough, the visual communication design must adapt to this breakthrough, and make a new design from a perspective that is more in line with the development of the times and more in line with the needs of digital development, so as to fully ensure the design. It can effectively play a role in the new era background, accurately and effectively transmit visual information, and form a huge visual impact. In the new design context, the design formula no longer exists, and the diversified combination of elements and style collisions bring more possibilities to the visual communication design. The transmission of visual information in an innovative and eclectic way is an important part of the current visual communication design. See Figure 4.

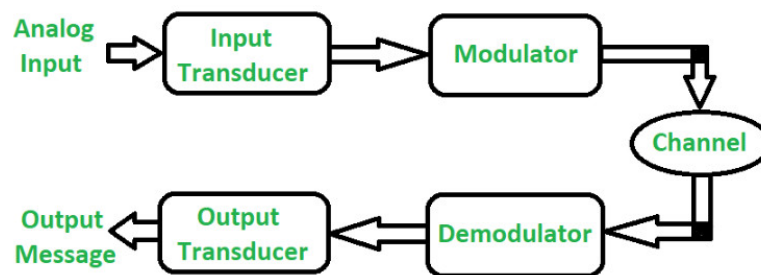


Figure 4. Visual communication design under the background of computer digital information technology

4.2 Diversified expansion and development

The diversified development of visual communication design is mainly reflected in the following three aspects: First, the development from static design form to dynamic design form. Visual impact is an important factor in visual communication design. Designers often need to use a variety of methods to form a strong visual impact, so as to effectively capture the audience's attention and transmit information. Dynamic visual images often bring greater visual impact, and they have natural advantages over static visual images. Therefore, the dynamic development of visual communication design in the digital age is undoubtedly a major breakthrough. Second, from two-dimensional to multi-dimensional design development. For a long time, graphic design has been an important part of visual communication design, which is mainly limited by the level of technology and designers. After the advent of the digital age, digital technology has made three-dimensional design easier and simpler. At the same time, the improvement of the design level in the industry has also made three-dimensional design the basis of visual communication design, which can bring the audience a sense of immersion and information transmission. The effect is greatly improved. Third, the development from material design to non-material design. Traditional visual communication design mainly uses paper as the medium, but in the digital age, the communication medium has become various screens, projections, etc., which is conducive to reducing design costs, optimizing design management, and improving the quality of design works.

4.3 In-depth integration of humanization, interaction and localization

In the digital age, visual communication design has become more humanized, interactive and localized, and the three are closely related and can achieve deep integration. From the perspective of humanization, visual communication design has always followed the principle of people-oriented, and all designs serve people and meet various emotional needs of human beings. In the digital age, technology should not become a medium to weaken the humanization of visual communication

design, but should become a channel to show humanistic care. Only with humanization as the foundation can the visual communication design in the digital age truly serve the human society. From the perspective of interaction, modern information dissemination emphasizes more on two-way interaction. Designers must not only transmit information to the audience, but also receive feedback from the audience, so as to ensure that the information transmission is accurate and efficient. When designing visual communication, designers should pay attention to interactivity and embed it in all aspects of the design work, so that the audience can interact with themselves from multiple levels based on the design work. From the perspective of localization, the diversified development of visual communication design in the digital age makes it no longer limited to specific elements, styles, etc., which provides infinite possibilities for the penetration of traditional culture in visual communication design. On the whole, although humanization, interaction and localization are the three major innovative development directions of visual communication design in the digital age, they do not conflict, but are highly coordinated. This is because the three are not at the same level, and are not competitive and contradictory. Instead, they can rely on the cooperation of all levels to provide strong support for the diversified expression of design works. Designers should be based on humanization, pay attention to the realization of interaction, emphasize the full penetration of local culture, and then design more meaningful and excellent works.

4.4 Three-dimensionalization of visual communication design

In the case of magazines, newspapers and other paper media being impacted by digital media, if the visual communication design is limited to the inherent two-dimensional state, such as the artistic arrangement of graphic images on a plane, its communication power will be greatly weakened. In order to enhance the competitiveness of visual communication design, designers must keep up with the pace of the times, promote the development of visual communication design to three-dimensional and even multi-dimensional directions, so that visual communication design can be updated in the digital context and bring people a new experience. For example, the way of turning pages of e-books has changed from the traditional page switching method to a more user-friendly simulation page turning method, which is more suitable for people's reading habits and weakens the reading difference between e-books and paper books. The mobile phone screen saver wallpaper is also developed from the traditional static wallpaper to the dynamic wallpaper, which enhances the fun and attractiveness, and brings people a refreshing visual experience. These examples of visual communication design from two-dimensional to three-dimensional show that designers should promote the close integration of visual communication design with digital technology and three-dimensional industry, and cleverly use the advantages of the intuitiveness of graphic design and the realism of three-dimensional design to make people Get a stronger sense of substitution and a stronger sense of experience.

5. Conclusion

In a word, in the environment of computer digital information technology, the innovation of visual communication design has important practical significance. In the process of practice, carry out in-depth thinking, analyze the current situation of visual communication design, especially the problems in development, explore new development ideas and development strategies, improve and strengthen visual communication design while solving various problems, and continue to increase influence It can objectively show the characteristics of the times, and push the field of visual communication design to a higher stage of development, so as to achieve sustainable development in the wave of development in the digital age.

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