

# Research on the application of information visualization in visual communication design

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**Abstract:** With the change of social environment, information technology has been better developed. In the visual communication design of colleges and universities, the application of information visualization is becoming more and more extensive. You can use pictures, text and other forms to disseminate complex data more accurately and realize the efficient transmission of information. The application of information visualization in visual communication, compared with the traditional way there are obvious differences, including the early data analysis and the late graphic performance, information visualization mainly focuses on the display of data and restore logic, through the use of visualization and process language, the abstract content is more intuitive display. This paper analyzes the characteristics of information visualization, starting from the design of books, packaging and other content, and puts forward specific applications in related fields to provide a new direction for the development of information visualization.

**Key words:** information visualization; Visual communication design; Applied research

Each historical period has its unique mark. The development of information technology in today's era has changed the way of communication, significantly improved the efficiency of information exchange, and exerted a great impact on production and life. Among them, the way people harvest information, mainly through the visual system, accounts for about 80%. In the process of visual communication design, information visualization has become an indispensable part. Relevant data can be displayed in a visual way to better understand relevant information, improve the efficiency of information transmission and promote the improvement of visual communication effect.

## I. The characteristics of information visualization

Information includes the expressed thoughts, emotions, cognition and other aspects of the content, in which data reflects the relevant attributes of things, can also be understood as data as raw materials, through a series of processing into information. Visualization refers to the image of information in people's minds. After looking at a designed infographic, the graph gives an explanation for the related things, so that people can better understand the related things. The process of information visualization is the process of transforming things from intangible to tangible. The final form of information visualization design is graphic design. In the actual design process, information graphic design and graphic design are often confused. Since the design of information and graphics belong to the visual language, the transmission of information is completed through vision. There are also some differences between the two. Graphic design is rich in language, including regional, ethnic and other aspects of information transmission, information design abandons the richness of language, the expression is more intuitive, and can provide a platform for people with different education levels. In the current stage of our country, the information visualization design needs to be clear about the differences between it and graphic design.

Due to the development of information technology and the emergence of big data, information visualization is increasingly widely used in various industries. In the process of information transmission and circulation, visual design has become an important way, which is conducive to the exchange of information. Information design generally carries out information transmission through data collection, visual expression and other ways, and takes usability and user's actual experience as the goal. There are some differences between this process and graphic design. It changes from focusing on entity to focusing on experience, analyzes multiple links of users, and realizes multi-angle information exchange. In a word, information visualization is generally applied to non-digital industries, and it does not have geometric attributes and obvious spatial characteristics. It is an intuitive way to show abstract content.

## II. The practical application of information visualization in the field of visual communication design

### 1. The application of information visualization in poster design

In the actual poster design, information visualization technology has been widely used to improve the efficiency of information transmission, while increasing readability and visibility.

#### (1) Charts and Graphics

In the information visualization technology, charts and graphs play an important role in the poster design link is very common. Designers can use a variety of charts to show relevant content, such as line, column and other charts, and can also use charts to show data, so that the information is intuitive and easy to understand. The first is the thermal map, which shows the relevant data intuitively in the form of color changes. In the actual poster design, the chart can show the differences between the data and provide convenience for information comparison. The second is the tree chart, which arranges the data regularly according to a certain level. In the poster design process, through the use of the chart, the composition and hierarchical relationship of large-scale projects or organizations can be better displayed, so that the

information is more orderly. The third is Sankey chart, which arranges the data according to the relationship of flow and transfer, and applies it to poster design, which can show the flow of a system in different stages, so that readers can better understand the relevant information. In addition, designers can use different colors, shapes, etc., to better demonstrate the importance of data, through the use of pictures, can increase the visual experience of the poster, attract readers' attention.

#### (2) Timeline

In information visualization, the timeline is a tool to arrange events in order through time order. In the process of designing posters, the timeline can show a certain event and process. The designer uses symbols to clearly show different events and make the information arrangement more orderly. For example, when designing a poster about history, different time periods can be marked by different symbols through the use of time axis, so that readers can understand the content of the poster more directly.

#### (3) Typeface and Layout

Typography and typography are important links in poster design. Reasonable arrangement can better convey information, attract readers' attention and increase the readability of information. Designers can improve their influence ability by choosing different fonts and typesetting methods. For example, when designing posters related to environmental protection, you can choose green fonts, enlarge the titles and so on, and reduce the insignificant characters. The rationality of the layout will have a direct impact on the beauty of the picture.

#### (4) Color

In the poster design link to choose a reasonable color, help to enhance the visual effect, improve the reader's interest in reading. Designers can cooperate with a variety of colors to achieve better results, such as the use of bright colors to attract attention, dark colors to emphasize the importance of data, through the use of gradient color to achieve the increase of visual effect. In addition, different colors will also show different emotions, among which red represents passion, blue represents rationality, etc. Through the meaning of different colors, better poster design can be achieved to achieve a significant improvement in visibility and interactivity. Interactive design can strengthen the interaction between readers and posters. Interactive elements can be added to posters, such as interactive columns, two-dimensional codes, etc., to help readers better explore relevant information. It is not difficult to find that information visualization technology has broad application prospects in poster design. Designers can achieve significant improvement in design effect through reasonable selection of tools and elements, and more intuitive display of relevant information.

### 2. The application of information visualization in book design

The use of information visualization technology in book design can better display book information, make readers get better reading experience and improve information visibility.

#### (1) Color and Font

In the book design process, color and font are indispensable elements, which can be visually designed to achieve a significant improvement in visual effects and improve reader satisfaction. Designers use different colors, fonts to achieve better results, such as according to the importance of information, the use of different brightness of the color, in which high brightness represents the importance of information; The use of different fonts, the level of information can be distinguished, through the rational use of fonts, so as to highlight the importance of information, so that readers can better find the required information.

#### (2) Images and Text

In the process of book design, the fusion of image and text plays an important role. Designers can make the information more intuitive and easier for readers to understand through the organic fusion of the two. For example, the designer shows the relevant data in the form of pictures, and interprets the pictures through text to increase the readability and visibility of the information; Through the use of a variety of visual tools, intuitive display of relevant information, such as charts, graphs and so on. Adjusting images, text, etc. can achieve different results, such as highlighting the importance of the image through large images and small text. By adjusting the position of the image and text, you can give the message order. In addition, by selecting the appropriate technology to complete the optimization of the image, such as color processing technology to increase the image contrast and color saturation, the use of filters to increase the effect of the image.

#### (3) Information stratification and organization

Information stratification and organization are important components of data design. Designers can stratify information and form a whole. The use of information stratification and organization can make readers better understand the information content, so as to improve its readability and visibility.

#### (4) Interactivity and data visualization

Interchangeability is an important part of information visualization in book design. It can increase interchangeability and help readers understand relevant information. Designers use different interactive techniques, such as links to jump, animations to increase interaction and so on. In addition, through data visualization, you can use graphics to show the corresponding data phenomenon, so that complex data to establish links, and find its rules and characteristics. Using data visualization, a large amount of data can be transmitted in a short time, from which useful information can be selected and the value of data application can be played. Designers can use different visualization techniques to better reveal relevant data, such as using charts to show data and using heat maps to clarify distribution. Through the application of data visualization technology, readers can better understand the meaning of data, improve data analysis and cognitive ability.

In a word, information visualization technology is frequently used in book design. Designers can better display relevant information through reasonable selection of visualization tools, font colors, etc., so that readers can get a better reading experience, thus achieving a

significant improvement in information visibility.

### 3. Application of information visualization in packaging design

Information visualization technology displays relevant information intuitively through visualization, and can convert data into a form of expression that is easy to understand, so as to achieve better information transmission. In the actual packaging design, the use of this technology can better show product information, characteristics and so on.

#### (1) Product Information

When designing product packaging, first of all, product information needs to be put in the first place to facilitate consumers to view. The designer can turn the price, ingredients and nutritional value into graphics, so as to facilitate consumers to view the relevant information. For example, in terms of selling price information, designers can help consumers better grasp the price of products through price signs, promotion signs, etc. In terms of composition information, for organic food, it can help consumers understand the composition of the product through no addition, organic crops, etc. In terms of nutritional value information, for foods with a variety of nutritional value, consumers can find out the nutritional value of the product through the nutritional composition table, vitamin content, etc.

#### (2) Product features

Designers can use information visualization technology to transform product features into easy-to-understand graphic elements, which can make consumers better understand product features and advantages. For example, when accepting products with waterproof, windproof and other characteristics, you can draw waterproof, windproof and other signs on the package, so as to highlight the product characteristics.

#### (3) Brand value

In the packaging design, it is of great significance to show the brand value, which can make consumers better understand the product and recognize the brand's products. The use of information visualization technology can better show the brand value, culture and concept, such as logos, slogans and other forms. The use of information visualization technology in the design of packaging can intuitively show the information characteristics of products and brand value, and achieve significant improvement in market influence and consumer satisfaction. At the same time, the application of information visualization technology, so that consumers have a better understanding of the product, can make a good purchase strategy.

## III. Conclusion

In summary, information visualization is about designing relevant content so that it is presented in a more intuitive form. The application in the field of visual communication design can significantly improve the utilization rate of resources, make people better understand the design meaning, product information, etc., help to better understand its content, strengthen communication, and promote the further development of visual communication design, which is conducive to the improvement of its effectiveness. In addition, information visualization visualization of abstract data, can help people to better understand and think.

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