

The Application of AR Technology in IP Image

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Abstract:

With the change of the times and the popularity of the Internet, the application of AR technology to the visual communication of IP image is more realistic, and the application of AR technology will become an important form of virtualized IP image. AR technology is an important form of technology that overlays virtual data in a real environment, analyzes relevant information from the objective world, and achieves the transformation from virtual to real. IP image is not only a form of expressing humanistic vision, but also a means of expressing local cultural heritage. IP image plays an increasingly important role in brand promotion. The transformation of IP image from design form to dissemination method conveys a more immersive aesthetic value and visual feast to customers, which also explores new development directions for the digital era of IP image.

Keywords:

AR Technology, IP Image, Visual Communication, Enhancement Capability

1. Introduction

Society is developing rapidly, and various industries and economies are constantly integrating. IP image is the most intuitive visual manifestation of corporate culture and product characteristics. With the rapid development of society and the continuous integration of various industrial economies, IP image is the most intuitive visual embodiment of corporate culture and product characteristics. The acceptance of the current IP image is not only about the shape, color, and cultural connotations, but also about the application of AR technology that reflects the transition from visual virtuality to reality. It is possible that in the near future, the traditional process of making reinforced concrete sculptures with clay sculptures of "sitting tigers" will be replaced by AR technology. AR technology has the market value of saving manpower, material resources, and financial resources. It has brought more realistic and three-dimensional visual effects in visual communication. The IP image is not only a decoration, but also a symbol of culture, which deepens people's hearts.

2. The Widespread Application of AR Technology

2.1. Introduction of AR technology

Augmented Reality (AR) is a technology that cleverly integrates virtual information with the real world, perceiving the overlay of the real world and virtual elements. AR technology uses cameras, sensors, and other devices to perceive the real world in which users are located. This can include identifying objects, detecting motion, and capturing environmental data. Once the real world is recognized and understood, AR systems can overlay virtual elements (such as 3D objects, images, text, or sound) onto the user's field of view. These virtual elements seem to blend with objects in the real world to create a unified scene. The two information complement each other, thereby enhancing the realistic expression of the real world. [2]

AR technology has interactivity, which typically allows users to interact with virtual elements. Users can interact with AR content through gestures, voice commands, touch screens, and other means to change the position, size, and state of virtual elements. Binf creates an immersive experience with users, providing them with a more immersive virtual reality, thus intertwining the virtual and real worlds. This allows users to explore virtual elements more deeply and interact with them without completely leaving the real environment.

2.2. Application field of AR technology

AR can be demonstrated on various devices, including smartphones, tablets, smart glasses, head mounted displays, etc., to showcase the flexibility of smart devices. Smartphones are the most common AR platform because they are equipped with cameras and sensors, making AR applications easy to develop and use. To create AR applications, developers can use various AR development tools and frameworks, such as ARKit (for iOS devices), ARCore (for Android devices), Unity 3D, etc. These tools enable developers to create AR experiences, including the placement, movement, and interaction of virtual objects. This leads to unique sensory communication and interpretation of diverse visual design concepts[3]. The application fields of AR technology are very extensive, including entertainment, retail and e-commerce, manufacturing and industry, social media and other fields. The rapid development of AR technology constantly creates new opportunities and application areas. It provides users with more interactivity and entertainment, while also offering businesses and industries more ways to improve workflow, training, and customer interaction.

3. IP (Intellectual Property) Image

3.1. Introduction of IP Image

IP image includes brand, character, story, etc. The "IP image" refers to intellectual property (IP), which is a widely known, exploitable, and potentially high potential artistic work. The visual and emotional expression of virtual or fictional characters, brands, works, or concepts represented by IP images. This concept is an important component of intellectual property and brand building, typically used in the fields of business, entertainment, and culture. An excellent IP image not only has lasting vitality, but can also be developed on multiple platforms and products, and can even freely transform in different forms. With the continuous influx of technological trends, more and more enterprises realize the enormous potential value that IP image brings to their brands.

3.2. Development and Utilization of IP Image

The management and protection of IP image are crucial for protecting intellectual property and maintaining brand reputation. Through reasonable legal measures, the image of intellectual property can be protected to prevent unauthorized use and infringement. In addition, effective IP image management can also help drive marketing, establish brand loyalty, and create influential images in the cultural, entertainment, and commercial fields. Establishing and shaping the image of intellectual property (IP) is crucial for individuals, businesses, and brands. A strong and positive IP image can help attract more partners, customers, and supporters, while increasing market value. Here are several aspects of IP image, each of which can be further enriched:

(1) Brand image: A well-designed brand image is the first step towards successful marketing. The Good Design Company studio in Japan, through continuous improvement and avoidance of its drawbacks, has abandoned the use of anti lock decorations, ultimately lubricating the cute and silly characteristics of black bears [5]. It can be seen that establishing the IP image of the brand is crucial, which includes demonstrating exceptional knowledge and skills in specific fields. A brand's IP will attract more business opportunities and partners, as people are usually more willing to collaborate with experts. This can be achieved through continuous learning and skill improvement, as well as through sharing professional knowledge and experience. The brand of a company or product can be seen as an intellectual property image. This includes the brand's logo, trademark, identity, and image, which represent the value, reputation, and market position of a specific brand.

(2) Fictional characters: Fictional characters in media such as literature, film, animation, comics, and games are also part of the IP image. These characters can sometimes become cultural phenomena, such as superheroes, cartoon characters, etc. By carefully creating and promoting fictional characters, unique and beloved IP images can be established.

(3) Diversification: Having a diverse IP image can increase attractiveness. This means not only excelling in the professional field, but also showcasing diversity, including cultural background, skills, and experience. A diversified IP image can attract a wider audience and establish relationships globally.

(4) Visibility: In the digital age, visibility is key. Actively utilizing social media, online publications, and public speaking platforms can increase the visibility of IP image. In addition, collaborating with other well-known individuals or brands can increase visibility.

(5) Story and worldview: The story, worldview, and background of certain works also constitute a part of the intellectual property image. For example, the magical worldview of the Harry Potter series is an example full of IP imagery. By telling captivating stories and constructing captivating worldviews, we can attract more audiences and fans. It can be seen that although the image of an IP lacks the humanity and emotions that humans should possess. The six characteristics of freedom, enthusiasm, tolerance, authenticity, confidence, and curiosity[6]. But the IP image should be endowed with better, more free, more enthusiastic, more inclusive, more creative, and more curious characteristics in order to attract more audience groups and fans.

(6) Innovation power: Innovation is the key to maintaining competitiveness in a constantly changing world. Establishing an innovative IP image means constantly seeking new methods, solutions, and opportunities. This positive attitude will attract those seeking innovative partners and organizations.

(7) Cultural and historical symbols: In 2021, Du Peilin et al. proposed three design logics for regional IP images: "moe", "borrow", and "personify" distinctive image design. Propose to explore the integration strategy of culture and historical symbols from four directions: visual transformation, visual communication, cultural experience, and library construction. It can be seen that certain cultural and historical symbols, such as the panda in China and the Eiffel Tower in France, are also considered part of the IP image, representing the unique characteristics of a country or region[7].

(8) Reputation and Integrity: Reputation is the core of IP image. At both the business and personal levels, reputation is crucial for success. To establish credibility, it is necessary to maintain commitments, abide by ethical standards, and treat people honestly. A trustworthy IP image will help establish long-term relationships, whether with customers, partners, or employees.

(9) Social responsibility: Actively participating in social responsibility activities is a way to shape the image of an IP. By supporting charitable causes, community projects, and sustainable development initiatives, individuals and brands can showcase their sense of social responsibility. This not only helps establish a positive image, but also enhances its appeal to the public.

(10) Communication skills: Effective communication is the cornerstone of building an IP image. This includes written and oral communication, as well as the ability to effectively communicate with different audiences. Clear and persuasive communication will help convey ideas and values, and enhance the ability to establish connections with others.

In short, establishing and shaping an IP image takes time and effort, but it is crucial for both career and brand development. A strong IP image will help attract more opportunities and supporters, while also helping to maintain long-term success. Through the comprehensive shaping of professional image, reputation and integrity, social responsibility, innovation, diversity, visibility, communication skills, taste and style, you can establish a strong and attractive IP image. Improving customer comfort and preference in this innovative environment is a topic that designers should always pay attention to. Designers should deepen and improve themselves with the trend of the times in order to adapt to the trend of the times.

4. The Application of AR Technology in IP Image

4.1. The impact of AR technology on enhancing the visual transmission of IP images

The application of AR technology in the visual dissemination of IP images can enable the audience to transcend reality and interact with the virtual world. The audience can observe, explore, and interact with virtual IP images through AR applications, rather than just passively receiving information [8]. This interactivity has sparked users' interest and deepened their understanding of the IP image. AR can improve the visual presentation of IP images. Virtual elements can be integrated with the real world to create captivating visual effects. This can include virtual fictional characters appearing in real environments, or virtual graphic elements enhancing the

appearance of product packaging or advertising. AR combines virtual and real worlds, providing an interactive and immersive experience that cannot be compared to traditional media. The following is the enhanced impact of AR technology on the visual communication of IP images.

(1) Enhanced brand story: The story of brand and intellectual property image can be enhanced through AR technology. Users can scan the product or logo to learn about the brand's history, the creator's background, or stories related to the product, which is enhanced by virtual elements and interactivity.

(2) Virtual trial and fitting: In the retail industry, AR technology can provide a virtual fitting or trial experience. Users can see themselves in a virtual mirror and try different styles or products, which helps them make purchasing decisions.

(3) Interactive advertising and packaging: AR technology can be used to create interactive advertising and product packaging. Users can interact with virtual IP images by scanning product packaging or advertisements, which enhances the attractiveness and effectiveness of advertisements.

(4) Enhanced virtual art and exhibitions: In the cultural and artistic fields, AR can be used to enhance art exhibitions. Users can view virtual artworks through AR applications, interact with virtual artists, and learn about the stories behind their creations.

(5) Real time information transmission: AR technology can be used to provide real-time intellectual property information. Users can obtain real-time information related to their IP image by scanning products, advertisements, or objects, which increases user engagement.

(6) Social media filters and effects: AR technology is widely used on social media platforms, and users can use AR filters and effects to interact with virtual IP avatars, enhancing their selfie photos and videos.

In short, AR technology significantly enhances the visual communication of IP image by increasing interactivity, creating visual enhancement effects, and providing deeper brand and IP image stories. This helps brands establish closer connections with users, improve user experience, enhance brand loyalty, and thus stand out in market competition.

4.2. The application of AR technology in IP image provides multiple innovative opportunities

AR technology can enhance brand awareness, improve user interaction, and create rich experiences for users in the application of IP image. AR technology allows users to interact with virtual IP avatars. This includes virtual fictional characters, brand IPs, or celebrity endorsers. Users can interact with these characters through AR applications, participate in games, stories, or virtual activities, thereby enhancing their sense of participation and experience. IP image brands can use AR to create interactive advertisements and product packaging. Users can interact with virtual IP images, obtain more information, and enjoy gaming or virtual experiences by scanning product packaging or advertisements, which helps to increase the attractiveness of advertisements. The application of AR technology in the retail industry can be used for virtual trial of clothing, cosmetics, or glasses. Users can see themselves in a virtual mirror, while AR applications allow them to try different styles, colors, or products, thereby increasing purchasing confidence. Make previous clothing

trials more convenient. AR can be used to tell the story of a brand or intellectual property image. Users can scan products or logos and then learn about the brand's history, values, or product manufacturing process through AR applications, which helps establish brand loyalty. The tourism and hotel industry can use AR to create virtual travel experiences. Users can explore virtual destinations through AR applications, interact with virtual tour guides, learn about local culture and history, which can stimulate travel interest and real-time information transmission. AR technology can be used to provide real-time intellectual property information. Users can scan products, advertisements, or objects to obtain real-time information about IP images, creators, or products, enhancing user interaction, virtual art, and exhibitions. AR can be used in the cultural and artistic fields to enhance art exhibitions. Users can appreciate virtual artworks, interact with virtual artists, and obtain detailed information, education, and training about artworks through AR applications. AR technology can be used in the fields of education and training. Students can interact with virtual historical figures, literary characters, or scientists through AR applications to improve learning outcomes, social media filters, and effects: Social media platforms such as Instagram and Snapchat use AR filters to enhance users' selfies and videos. These filters may include virtual IP avatars that allow users to interact and share with them.

The IP image application of AR technology provides innovative and interactive ways to attract more audiences, enhance user experience, increase brand loyalty, and enhance market competitiveness. It not only provides fun experiences, but also enables brands to establish closer connections in the digital age. Brand image visual is a visual symbol of brand culture, philosophy, service, quality and other brand factors. Appropriate design forms and visual communication effects will present the brand to the public with a good first impression [9].

5. Conclusions

The development from two-dimensional visual form to three-dimensional visual space allows people to showcase the visual impact of IP images in various fields through wearing devices in both virtual and real environments. Through the presentation of AR technology, the public can see how designers conceive and create IP images in their field of vision. The application of AR technology in IP imagery makes it visually more dynamic and achieves high recognition. AR interactive representation enables the brand's image, fictional characters, and other visual elements to achieve a more diverse and consistent design level. Moreover, the use of AR technology in the entire visual space impacts people's visual and psychological perception, increasing the recognizability, cultural awareness, and social dissemination power of IP images. At the same time, it gives IP image identity, making IP images more integrated into the public's vision. The rapid development of technological progress has influenced the development of visual communication design in various fields to varying degrees. The integration of AR technology and IP image will give rise to more designs that can create social and economic value.

Conflicts of Interest

The authors declare that there is no conflict of interest regarding the publication of this article.

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