

Innovative Design and Management in the Context of Virtual-Real Scenarios

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Abstract

From virtual technology, the Internet to the meta-universe, around the creation of virtual and real isomorphism and immersive experience venues, an innovative integration model and innovative design concept integrating the three major fields of "science and technology + art + culture" have been opened, and the method of today's design industry management model has also been shaped. The author, ground on design originality and experience, intends to source feasible exhibition design tactics from the "presence" design and implementation project that integrates immersive display and performances. From this, efforts are invested in sorting specific innovative design patterns referring to ongoing cases of Metaverse, thereby charting course for prospective design projects.

Keywords: *Scene Innovation Design; Atmosphere Aesthetics; Project Management; Virtual-Real Integration; Metaverse Scene Design*

1 INTRODUCTION

Cultural presentation and communication experience design now values a good handle on aesthetic atmosphere and places particular emphasis on emotional resonance, amid progress in the innovative development of new media technology and ascension of public aesthetics. "To strike a chord, raising viewer's cognition in terms of content is of equal importance as stimulating their senses in the form of design to enrich their experience." ^[1] Present display design has redefined the correlation between the audience and information transmission, as it focuses on enhancing the multi-dimensional sensory appeal to render the interactive, digital, and immersive one of the charms in virtue of integrating "technology + art + culture". Display of both culture and brand assets now mine deep into cultural content and put highlighting the expressiveness and appeal of design high on agenda, to cast a brand-new innovative design model from "mining, display to dissemination". Project management shifts its core from securing sound presentation effects in the past to the full-chain administration of the planning, design and implementation of the experience. From planning, experience to final data evaluation, it makes hit IPs out of resources by means of creativity to access to cultural assets.

2 INNOVATIVE THINKING FOR CULTURAL DISPLAY SCENARIO

Offering a tour of experience marks one of the core goals of creativity and management. More than shaping a scene, it places extra emphasis on establishing the connection between people and the scene, thereby creating an exclusive and distinct experience for cultural diffusion and the public. Embedding cultural contacts into the journey, it is to stimulate the public's desire to improve their awareness, probe into, experience and share cultures through the corresponding display. At the heart of cultural display project management lies the goal of enabling public experience journey in virtue of a series of activities such as planning, organizing, directing, coordination and control. Taking advantage of the mastery of the experience narrative, it plans to come up with an innovative design mode that

subdivides target management links from "narrative logic and narrative dimension", "body-based experience", "experience evaluation", etc., updates the design with the public's evaluation feedback on the experience, and supports sustainable optimizable advance and is instructive for future innovative design (Figure 1).

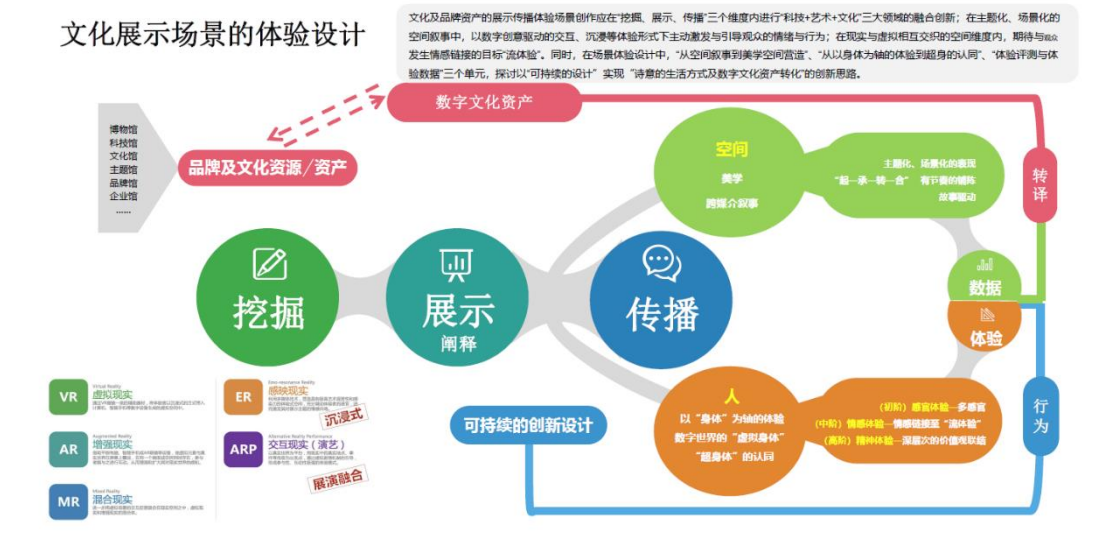


FIGURE 1 INNOVATIVE DESIGN MODE FOR CULTURAL DISPLAY

2.1 Content Digging Backs the Narrative Structure of Cultural Display.

Ground on the content, it should guide the progressive context of the experience level with the framework of drama narratology, advertise the core of cultural ideas, and establish a content interpretation system of "root-vein-core" for cultural mining. The core is to build a tour of experience of the story, drive the narrative with the story, and value the communication of the theme and the layout of the experience rhythm.

2.2 Space Construction of Atmosphere Aesthetics Reshapes the Innovative Design of "Real-Virtual" Cultural Space.

New media, technology and art open up more possibilities for the expression of scenario design, enliven storytelling, and enrich emotional experience. "In addition to learn or exchange, people are now looking for human feelings such as 'emotion', 'communication', 'resonance' from exhibitions. Information (knowledge), entertainment and aesthetics constitute culturally label modern museum exhibitions." [2] Scenarios carry information and offer a chance for emotional communication at the same time. Equipped attributes of narrative communication, interactive experience, aesthetic appreciation and other diverse functions have made it a rising culture-carrier star that is favored by the public and enables resonance. Scientific and technological innovation inspires design creativity. Innovative designs boosted therefrom and the mutual mapping of virtual and reality, as the application of virtual technology matures, have broadened the scale of space, extended the dimension of time and the breadth of physical space, and set up a virtual-reality experience field. Instead of being passive viewers, people can actually find themselves a job in the narrative of the image, which, in turn, enriches experience and furnishes scenarios with diverse imagination and expressiveness.

2.3 The "Body-Oriented Experience" Grows into A Three-In-One Taste Integrating "Sensory, Interactive and Emotional Experience".

"Body perception" refers to an intentional communication of perception and experience with the body. Under the "body"-based creative system in the virtue-reality scenario of physical space and digital image, the sensory experience

realized by the primary "multi-sensory", the emotional experience by the middle-level emotional connection "flow experience", and the spiritual experience by the high-level deep value connection are all to evoke people's values resonance. The experience of "full body perception dimension" is characterized in immersion, interaction, non-linearity and randomness. Breaking through the narrative of traditional display by means of technology, with a comprehensive scene narrative across media, the design, with a media-across comprehensive narrative, centers a core theme from diverse viewpoints, alters the context of the linear development of the previous narrative, and builds a scene space field to cover the dimension of full perception.

Creative cultural display scenarios, as mentioned above, should stick to the communicated-oriented creative principle that lists planning as the soul, space as the carrier, and media as the breakthrough point. Differentiated from traditional content promotion-guided or art beauty expression-valued design, it is more about an emerging design idea of space and media fusion narrative and innovative processing methods of theme and scene. The digital creativity-driven interaction and immersion in thematic and scene-based spatial narrative shines on actively stimulating and guiding the public's emotions and behaviors and immersing them in the reality (atmosphere aesthetics scene)-virtual (media visual communication)-intertwined spatial dimension, thereby accessing to the experience of emotional connection with the public.

3 APPLICATION AND IMPLEMENTATION

More than 20 innovative designs under the "Innovative Design Mode of Cultural Display Scenes" are scattered in Beijing Daxing International Airport (Figure 2). Positioned as a comprehensive international hub, the Airport, with culture as the cornerstone, enhancement of passenger experience as the core, and commercial benefits as the goal, integrates experience, culture and technology to create a cultural landscape with Chinese characteristics. The said 20 cultural scenes form an international cultural exchange platform covering cultural, art, entertainment leisure, and other spaces. etc. It activates cultural vitality with creative design, and enables a people-oriented, resonating, high-quality experience with deep branding.



FIGURE 2 BEIJING DAXING INTERNATIONAL AIRPORT DIGITAL HUMANITIES LANDSCAPE PROJECT

The human landscape exhibition "Lu Ming", at the exit of the international arrival hall on the first floor, takes its name from the Book of Songs regarding the theme interpretation and cultural excavation, which suggests that the Airport welcomed guests from all over the world as the host, mirrors the country of etiquette and the elegant demeanour of a power. Through the full integration of culture and technology, it presents the virtual-reality space-time field, and create an artistic landscape filled with oriental humanistic thoughts combining physical landscape with transparent screens. The tall multimedia video images complement the splendid green plant landscape and echo each other, and together they interpret the dynamic poems. The static art landscape and the transparent screen are skillfully integrated, so that the landscape and digital content can beautifully restore the artistic conception in the poems and express the aesthetic

atmosphere of oriental culture (Figure 3).



FIGURE 3 HUMAN LANDSCAPE "LU MING"

The human landscape "Journey of Light and Shadow" (Figure 4), themed "Four Seasons in the Eyes of the Master", embraces Van Gogh's "Almond Blossom", "Green Cypress Wheat Field", "Starry Night", "Sunflower", "Bumper Harvest", "Wild Rose", Monet's "Water Lilies" and "Melting Ice", deconstructs and reshapes the works of the artist, creates an immersive experience space through projection mapping, interaction, video art and music, showing the growth, bloom and maturity, withering, and the continuous light and shadow journey of the changing seasons. When the art of painting in the 19th century meets the digital technology in the 21st century, a new exchange between people and art takes place, bringing visitors an immersive and fantastic experience and creating a moving life. 13 projectors there create an immersive surrounding space. While walls and the ground mounted with interactive sensing devices trigger special effects on the screen by sensing the movements of passengers within the interactive range. Butterflies fly, meteors, and water waves sway under the fingertips of travelers across the screen. In the feast of art and vision, visitors can mobilize their vision, hearing and touch, and feel the intersection with the master across time and space.



FIGURE 4 IMMERSIVE ART SPACE "JOURNEY OF LIGHT AND SHADOW"

An extreme higher threshold has been raised in terms of external conditions as the project is landed on the terminal building of Beijing Daxing International Airport, a national key project and a "new national gate", as well as an air transportation hub gathering a prodigious amount of traffic flow. The terminal itself also has strict construction management procedures and specifications, and high requirements on the quality, safety, progress, risks and other fields of the exhibition items. To smooth innovative design, the overall management goals were first decomposed according to certain principles through the WBS (Work Breakdown Structure) and assigned to each person. Then, thanks to management tools such as "Deming Circle", the team divided each specific work process into four stages of PDCA and cycle continuously, namely Plan, Do, Check and Act. It was required to make various work according to the plan, implement the plan, check the implementation effect, and then include the successful ones into the standard. Failed ones were solved in the next cycle. Finally, all were accomplished.

This methodology guides a series of practical cases, which not only promotes technological innovation through the needs of design, but provides more inspiration for design.

4 TRANSFORMATION OF DESIGN MANAGEMENT MODELS IN THE METAVERSE FIELD

From offline to web2.0, to the Metaverse, a mixed-dimensional space-time in which the surreal and the reality coexist is building up. Gradually upgrading of the experience also breeds new design exploration topics for the construction of digital scenes. Answers to enabling the public to obtain the same experience of "existence", "identity" and "emotional satisfaction" as the on-site experience in the digital virtual time and space, especially in the Metaverse where the virtual and the real are mixed, constitute new challenge. While how to apply the innovative design mode to the scene design of virtual space has put forward a new thinking topic for the innovation of experience method and mode.

The innovative design in the virtual and real isomorphic scene still focuses on the design of the public experience journey and conforms to the experience design path of cultural display scene of "excavation-display-communication". In the display dimension, it still includes the construction of the experience field of "aesthetics of atmosphere" and "experience with the body as the axis". In essence, the Metaverse is not just a technology or a scene, but a "mixed virtual reality" that merges and grows.

4.1 New Features in Scene Narrative Expression

When the public's experience goes beyond the physical space, and extends to the virtual world, immersion, gameplay, interactivity, and openness will make core concerns of experience design in the Metaverse, and its interactive experience mode and realistic interaction design will surely make a difference. The aesthetics of atmosphere and the design of human-induced emotional experience, however, are intrinsically connected, and continue to be the two core focuses of scenario shaping. The spatial dimension considered by the atmospheric aesthetics in the Metaverse scene spans from the physical space of the entity to the superposition of the physical space and the virtual scene. The virtual scene here refers to not only the virtual reproduction of the real scene, but refraction of human inner consciousness, making scene shaping more imaginative and abstract and furnishing it with characteristics of multi-media, cross-time and space, and diversified means of integration in terms of scene narrative expression.

4.2 The Satisfaction of Public Emotional Communication and Aesthetic Appeals

The construction of the experience field of "experience with the body as the axis" presents the dual needs of emotional connection and value creation in terms of public experience demands. "At the level of spiritual perception, we have developed from the past scene era to the current Metaverse, so the destiny of the Metaverse is to build up the inner world of people."^[3] Therefore, what is constructed in the Metaverse is not only the experience scene, but the attention and response to the needs of people's spiritual world.

4.3 Establishment of Data Evaluation and Feedback System

On the one hand, digital creativity reflects the aesthetic driving force of exhibition design itself, and the atmosphere aesthetic design of virtual space subtly presents the Metaverse scene of aesthetic literacy. On the other hand, digital technologies such as computational art, VR, and brain-computer cultural equipment, technologically back scene shaping and enrich creative experience. The initial exploration of the integrated solution of the Metaverse is to realize

the value-added design of cultural IP through creativity and technology, drive efficiency through innovation, and boost the circulation of economic assets through cross-media operation.

At present, the author's team is working on the joint research and creation of DCC LAB (Digital. Culture. Creativity Lab) digital culture Metaverse (Figure 5) plan that focuses on the exploration of "Metaverse" related technologies and the shaping of virtual and real "mixed reality" fields to explore new integration models of fusion and innovation.



FIGURE 5 DCC LAB METAVERSE

The DCC Lab Metaverse scene organically integrates virtual time and space, virtual people, and digital collections to output a highly unified Metaverse of people, goods, fields and environments. It intends to land a variety of Metaverse scenarios, including a creative center, a convention and exhibition center, a digital art center, and a "1+1+1+N" display cluster model with two expandable units. The "Eternal Van Gogh" (Figure 6) carried out so far is actually exhibited at the China Academy of Painting and Calligraphy and launched on the Metaverse platform. With the virtual and real Van Gogh art carrier, digital art and traditional art advance jointly and makes an innovative attempt of digital art experience of virtual and real isomorphism.

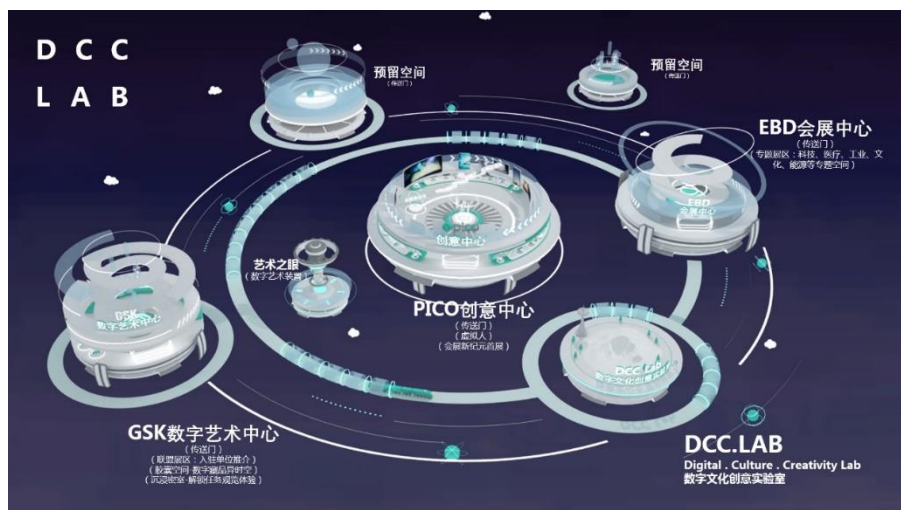


FIGURE 6 "ETERNAL VAN GOGH"

The large-scale immersive multi-sensory new media art exhibition "Wang Ximeng and Van Gogh's Metaverse Dialogue - AI Re-creation of Eastern and Western Art and Culture", based on Eastern and Western aesthetics, from "A Thousand Miles of Rivers and Mountains" to "Starry Night", invites people to travel through time and space to

immerse themselves in the color context of Eastern and Western cultures. The exhibition uses scientific and technological means to communicate with works through time and space, and uses artificial intelligence image generation technology to jointly create new works of art under AI collaboration. It integrates immersive multi-sensory experience, realizes the dual-dimensional viewing of "offline + Metaverse", breaks the barriers of time and space, and establishes a "presence" experience in a virtual-real isomorphic scene. The new media art exhibition takes Wang Ximeng and Van Gogh's "A Thousand Miles of Rivers and Mountains" and "Starry and Moon Night" as the main axis, mirrors the charm of Chinese and Western masters, and then re-interprets it with AI, extending to the online follow-up creation of the Metaverse. It also extends the viewing time of art. Meanwhile, combined with artificial intelligence technology, Chinese and Western painting boldly and freely breaks the limitations of time and space, focuses on the spirit of experiencing freehand situations, integrates classical cultural memory and current technological experience, creates a richer experience level from appreciation to creation in the exhibition, provides rich imagination and aesthetic freedom, to achieve the poetic experience of roaming the landscape with a more open perception. With classical culture into digital assets through digitization, it authorizes to create secondary art with AI, and continuously updates and generate on the Metaverse platform, generates new content for IP, and forms a cross-media narrative system. The platform expands the spread of the audience, and forms an innovative derivative from IP to super IP through human-computer interaction to keep IP alive.

In addition, with the help of big data analysis of artificial intelligence and the ExQtm experience analysis method, it helps achieve benchmark score measurement, observes the audience experience in real time, forms experience evaluation reports, and proposes optimization and solutions for the exhibition through AI intelligent analysis. The overall exhibition is scored to make the effect of the design clearly visible, and a feedback system for experience analysis and communication effect evaluation is established to form a Metaverse experience from design to effect evaluation, thereby optimizing the sustainable design closed loop of design.

CONCLUSION

With the ever-advancing new technologies, media and art forms, the development and innovation of virtual technology will inevitably provide more inspiration and innovative ideas for scene creative design, accelerate the two-way drive between creative design and technological innovation, and provide the public with Richer scene experience. In the course of innovative design and management, whether it is a physical scene or an immersive virtual scene in the Metaverse, the path is still in line with "excavation-display-communication". In the innovative design under the virtual and real isomorphism scene, it builds a sustainable design system "from spatial narrative to aesthetic space creation", "from body-axis experience to over-body identification", "experience evaluation and experience data", discusses "the innovative ideas of poetic lifestyle and digital cultural assets transformation", and provides innovative ideas for the implementation of projects that combine virtual and real cultural scenes, "online" and "presence".

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