Dilemmas and Strategies of Metro Cultural Communication in the Context of 'Immersive Intelligent Media + Scene Theory'

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Abstract. With the popularization of 5G and the advent of the era of integrated media, immersive smart media and the era of scene-based media have begun to gain importance. Firstly, the article compares the origin and current situation of immersive smart media and "scene-based" construction, analyzes the characteristics and attributes of metro media and passengers, and points out the current situation and dilemma of metro media communication. Secondly, the author proposes a communication strategy for the metro media through an empirical study of representative cases. Finally, the trend of underground station culture communication in the era of "immersive intelligent media + scenes" is proposed to provide implications for the theory and practice of underground station culture communication.

Keywords: Immersive media · Scene theory · Metro media · Cultural Communication

1 Introduction

With the advent of the 'media in everything' era, urban cultural communication has been included as one of the key aspects of the development of the new all-media era. According to McLuhan, media are an extension of the human senses and are not limited by time and space. Henri Lefebvre According to Lefebvre, space is the site of the interactive reproduction of all relations.

The vast underground space of the metro can be used as a communication platform for the dissemination of urban culture, and the wealth of innovative forms also attract passengers to interactive communication, highlighting the unique value of the metro medium. Compared to other media, enclosed, semi-forced and immersive scenes are all spatial features that make the metro unique [1]. With the development of immersive intelligent media in recent years, major cities in China have started to integrate AR/VR technology into the metro media, which not only solves the problems of single visual

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form, limited information-carrying capacity, and low user experience that exist in the metro space but also enhances the spatial plasticity, entertainment and interactivity of the metro and enriches the connotation of communication.

In the context of immersive smart media, the metro as a communication scene for urban culture needs to be innovated and transformed. How do you see the characteristics of metro media and audiences in the age of immersive scenes? What are the dilemmas of metro media communication? How can authors maximize the use of immersive smart media to communicate culture? In this paper, the author explores the issues and proposes corresponding strategies based on scene theory and from the perspective of the underground media space in the context of immersive intelligent media.

2 Immersion Communication and the Combing of Scenes

In 1967, the American psychologist Harry Checkson Meharry first introduced the term 'immersion' 1967. The term 'immersion' was first coined in 1967 by the American psychologist Harry Checkson Meharry, who believed that immersion is a sensory experience in which an activity attracts people's attention and interest, causing them to become fully engaged in the activity. The process of communication is dynamic and personalized, evolving from a media of all things to a media of all things. Immersive communication embodies the fusion of "remote and ubiquitous", breaking down the boundaries between life and work and integrating everything through cloud computing to maximize the effect of communication.

The term "scene" is used in the theatre industry to refer to a scene in a film or television production consisting of elements such as background music, character combinations, and sets. Merovitz, who considers a scene to be a combination of "occasion and situation", places great importance on the consistency of time and space [2]. All of Robert Scoble and Sheryl B. Schaub. Robert Scoble and Sheryl Israel In 2014, mentioned that the next 25 years would be the era of virtual scenarios. The advent of scenario communication is the result of five technological trends stemming from scenarios, also known as the five forces of scenarios, namely data transfer, graphical search, sensory bionics, small data capture, and the final scenario. The development of "scenarios" can be divided into two phases. The first phase is "occasionisation", which provides personalized information based on different scenarios. The second stage is "scenicisation", which, after personalized information has been disseminated to passengers, will move towards scenery and immersion.

According to Peng Lan, immersion and scene are becoming the two core elements that must be mastered after content and social. In the context of the rapid development of immersive scenes, audience experience has become the focus. Currently, the metro space has become a new venue for cultural communication in the social spotlight. Only by integrating immersive technology and scenes into the metro space can authors better help urban cultural communication. Zhang Hongzhong believes that in the future all media will be part of the scene and play an accompanying function. Robert Scoble and Sheryl Israel also pointed out that "the future is the age of the scene, and the future of communication will be a communication that fits the scene."

Li Qin believes that treating the audience as the center of the environment of metro media communication and providing them with multi-dimensional and personalized services can effectively enhance the experience of scene users [3]. As an artificially constructed environment that can host a variety of services such as social, gaming, content, and user sharing, scenes provide audiences with more imaginative services through information matching on a micro level, and their functional characteristics are to establish elemental ties between users and users, users and producers, and users and products or services, and to facilitate their collaborative development and value realization. The communication of the metro scene enables the emotional interaction between the audience and the urban culture in a closed, semi-forced metro environment, allowing the audience to communicate emotionally and attitudinally, and enhancing their sense of identification and adhesion to the urban civilization.

The communication sociologist Manuel Castell's theory of the networked society introduces two innovative concepts, namely 'spatial mobility' and 'hyper-time'. Spatial mobility" refers to the immediacy of contemporary communication and the disappearance of traditional spatial distances, while "super time" refers to communication that is no longer limited by time or brevity in the usual sense but becomes full-time and ever-present [4]. Immersive communication is concerned with communication without borders, which is reflected in the disappearance of the boundaries of work, play, and life. Immersive borderless communication in the metro space, such as "VR + metro travel", as artificial intelligence that replaces human functions, constructs a specific time and space for the audience, turning the metro ride into an immersive metro, which breaks the limits of time and traditional spatial distance, enhances the audience's immersion in the virtual world and brings them into a virtual and physical The subway ride becomes an immersion in the virtual world, breaking the limits of time and traditional spatial distance, enhancing the audience's immersion in the virtual world and bringing them into a virtual and physical perception of a more vibrant and comprehensive information content carried by a three-dimensional and multi-dimensional context.

3 Overview of Media and User Characteristics in the Metro Station

As a physical urban space, the metro has not only the economic and instrumental properties of transport but also the properties of a medium [5]. As a carrier of material information and human circulation, the metro carries the collective perception and image of a city [6], systematizing cultural information and disseminating it on a large scale, and invisibly constructing a systematic media environment that sustains the functioning of society [7]. The communication of the underground media occurs not only between people but also between people and things. In the enclosed space of the underground, people with different professional identities are carried to their respective fixed places, and they will interact with each other intentionally or unintentionally, whether between passengers and attendants, between unfamiliar passengers or through the intermediary of material things, resulting in spiritual exchanges and collisions of ideas, all these social interactions, explicit or implicit, make the metro an important hub of urban communication and interaction.

3.1 Characteristics of the Metro Media

Cultural communication relies on the combination of one small-medium after another. According to McLuhan, any element that extends the urban landscape and constructs the function of urban space can be considered a medium [8]. The metro, as part of the urban symbol, has the property of being a medium of communication. Through the collation and analysis of relevant literature, urban cultural communication in the metro space is divided into two main categories, namely the category of equipment and facilities and the category of entertainment activities. The equipment and facilities category includes onboard TVs, light boxes, art corridors, art installations, art walls, reliefs, VR, AR, onboard films, and tunnel posters. Through multi-sensory interactive technology, the public can experience an all-around immersive and interactive experience, which also adds interest to the promotion of urban culture and enables the dissemination of urban culture from a human perspective. There are four types of entertainment: exhibitions, experiences, performances, and educational activities. The enclosed, semi-compulsive and highly focused nature of the metro space provides a favorable environment for the development of these activities, and the public receives cultural information through passive or active participation and secondary dissemination, maximizing the effect of communication.

The underground, in assuming its media function, has both cultural transmission properties and vulnerability to attrition [9]. In the metro, a fixed place of circulation, it achieves spatial displacement for passengers while at the same time transmitting cultural values imbued with strong subjective overtones. This flow of information is transmitted by residents and tourists who, through the process and ritual of riding the metro, actively or passively receive the socio-cultural judgments and meanings conveyed by metro symbols. However, despite the large passenger base of the metro, it is also extremely mobile. In the closed and homogeneous environment of the metro, people tend to become bored and dull, and they interrupt their interaction with the outside world, shifting their attention to the virtual mobile network, in which they only have a short-term memory of the information disseminated on the metro. The subway's cultural communication is blocked to a certain extent, and social and cultural information cannot interact effectively with the audience.

The underground communication process engages the audience's multi-dimensional sensory experience. The media content on the various electronic screens in the metro stations, the murals in the stations, the various billboards, the station signs, and the eating places in the stations all mobilize people's senses such as hearing, smell, taste, sight, touch, and perception, allowing passengers to experience the symbolic meaning fully conveyed by the metro space. These sensory stimuli are direct and real, in line with people's habit of receiving fragmented information, and fully reflect the characteristics of modern communication.

3.2 User Characteristics of the Metro Media

Metro passengers are highly homogeneous, aged between 20 and 35, with an average age of around 34. 75% of them have a college education or above and are mainly young and middle-aged white-collar workers, a group with a high level of online activity and a low

level of mutual stickiness, with several communities intersecting behind each passenger, which is conducive to the dissemination of information on urban culture.

In addition, the metro space is mostly underground and closed, so people's attention is more concentrated and semi-compulsive, and the communication of information in the metro space has a high impression and high recognition [10]. While most outdoor advertising has a communication rate of 17%, the communication rate in the metro space is over 75%, and the attention span is exponentially increasing, maximizing the effect.

In the metro, users tend to transform their surroundings into a relatively private and protected space that is all their own. The physical space of the metro is shaped as a transitional spatial and temporal place between life and work, allowing passengers to form their own 'compartmentalised private space' in an otherwise open public space. In the process of physical movement, passengers often use the time they spend traveling as a filler and extension of their work and life, maximizing the time they spend in this medium of movement and subconsciously creating their own unique and personalized 'safe space' in an unfamiliar medium, to alleviate the physical and sensory discomfort and oppression caused by the process of physical movement. The subconsciousness of being in this mobile medium maximizes the time spent in it, subconsciously creating their own unique and personalized 'safe space' in an unfamiliar media environment, to reduce the discomfort and pressure on their senses during physical movement.

4 Current Situation and Dilemma of Metro Media Communication

Even in the first-tier cities of the North, Guangzhou, and Shenzhen, not all underground advertisements are positive, and there are still flaws and flaws.

4.1 Cumbersome and Tedious Forms of Communication

Many stations in the metro space can be fully utilized, such as access channels, carriages, and waiting halls. Therefore there are more forms of advertising such as posters, light boxes, LED advertisements, on-board advertisements, and PIS [11]. The visual and aural impact formed by the combination of graphic elements can also spread the message to passengers. However, the enclosed nature of the metro space also leads to an exceptionally noisy environment, making the aural communication weakened, while the visuals do not convey as well due to the lack of interactive contact with passengers.

Although some metro stations will innovate accordingly, such as using LED screens or points of light, the cultural scenes created by immersive smart media are less often used to attract passengers' attention for interactive experiences. Also, forms such as pasting QR codes increase the cost of passenger action and lack novelty.

4.2 Information Dissemination Interfered with by Mobile Devices

The metro carries city dwellers to and from their destinations and origins, and therefore carries a huge volume of passengers. This presents both opportunities and challenges. With the rapid development of mobile social media, mobile phones have become one of the factors that distract the public from ignoring advertising in the metro space,

with Nielsen's 2017 China Consumer Advertising Focus showing a 69% mobile phone interference rate. In a closed space with a huge average daily passenger volume, mobile devices distract the public's attention and mobile phones become the noise of information dissemination. When the underground carriages are crowded, the screens are blocked by the crowd and passengers have no time to pay attention to the advertisements, even when there are fewer people, people look down at their mobile phones [12]. It is only when passengers are immersed in a particular scene that they are not distracted by other factors and can achieve a deeper communication with the advertising communication.

4.3 Emphasis on Reach but Neglect of Creativity

The underground space is vast and suitable for large area posters or wall stickers and other group advertisements, with good visual effects; the entrance passage and corridor are narrower, so passengers have to focus on walking, inconvenient to look at mobile phones and guide signs of noise interference, so the audience's attention is more focused; the waiting hall because there is no shelter, LED screen display effect is better, but because there is no personalized advertising, and The effect of the LED screen display is better because of the lack of personalized advertising and the lack of creativity, therefore the communication effect is average.

Underground advertising content innovation but less, and advertising form multiple, visually difficult to harmonize and unify, easy to give passengers a mixed message feeling, difficult to leave a deep impression. It is important to bear in mind that creativity is the finishing touch to advertising [13]. For example, the first edition of Wuhan Metro's Metro Carnival, with the theme of "High IQ Metro", spread the culture of Wuhan city and the civilized etiquette of the metro. The theme of the third edition was "Treasure Metro", which helped to promote the Military Games. The third edition, with the theme of "Treasure Metro", contributed to the Military Games.

5 Strategies for the Metro Media Communication

5.1 Immersive Culture Constructs Station Domain Scenes

As part of the city's symbols and as a transportation hub for urban construction, the underground carries the cultural connotations of the city. Therefore, combining the characteristics of the station area with the city's culture and creating scenes with immersive technology can help to make the underground a new window for the dissemination of urban culture. For example, London Underground's Baker Station has been transformed into a museum of the Underground, with posters on the station platform communicating the 150 years of history of the Underground, and many portraits of Sherlock Holmes with a cigarette on the station walls, immersing passengers in London's urban culture through scenario building. In addition, many portraits of Sherlock Holmes with a cigarette are pasted on the station walls, engaging passengers in London's urban culture through the construction of scenes [14]. Xi'an is the starting point of the Silk Road, and Line 3 of the Xi'an Metro uses "One Belt, One Road" as its cultural theme, combining the new era with Han and Tang culture to showcase the long cultural heritage of Xi'an.

When immersive cultural scenes are constructed in metro stations, passengers enter the metro not as a mere journey to and from the station, but as a deep sensory experience that exposes them to the culture of the city through the ages.

The more creative the form of communication, the lower the behavioral costs and the higher the passenger engagement rate. The metro medium can therefore also interact with mobile passengers through features such as WIFE and shake to push advertising content into their daily lives [15]. For example, after identifying precise passengers through multimodal sensing and software and hardware computing technologies, such as eye movement, body sensing, and visual functions, content related to urban culture is disseminated to target passengers through WIFI hotspots. The interactive experience is used to reduce the interference of noise, stimulate passengers' sense of belonging and identification with the city culture, and generate multi-level communication.

5.2 Rely on Immersive Media to Enhance the Anthropomorphic Experience

At present, the public is more easily attracted by sensory experiences, and building scenarios can effectively enhance the interactive experience of passengers and reduce resistance psychology. For example, in the same year, Shanghai Metro cooperated with MIGU to place an LED screen in the ticket hall or corridor of the underground, and as soon as a passenger passed by and stayed in front of the screen, the user would become a football player and simply carry out a series of physical interactions, such as lifting the leg to kick the football in the screen and accompanied by the sound of applause and animation effects of the goal, making passengers feel as if they were in the football field. Shanghai West Nanjing Road Station collaborated with Lily clothing brand to launch the 'Fearlessly brilliant' flash shop, where two 'lightning fitting' interactive devices were placed in front of the station, guiding passengers to stand in front of the devices and automatically generating the right clothes and hair accessories for them, which could also be shared on social media. There was also a media dip in the Beijing and Shanghai hub metro tunnels, where designers placed continuous interactive food images at both ends of the tunnels so that passengers could see the animated food lighting up through the windows of the tunnels as the metro ran at high speed.

The metro medium can therefore popularise passenger multimodal recognition devices, algorithmically generated art, visualization, and VR/AR holographic projection technologies to arouse passengers' curiosity, gain a more immersive experience and tap into new communication channels.

5.3 Dual Scenes to Create Immersive Special Trains

Scene construction in the metro space is divided into two types: virtual and real scenes. Virtual scenes improve reach by collecting data and pushing content in a targeted manner. The scenario is built through the mutual integration of sensors, mobile devices, mobile terminals, LED fixed screens, and cloud-based platforms to enhance the interactive experience. In addition, the underground media is regarded as a communication node for spreading brand image, online leads to offline, and perpetuates the topic heat by the closed scenario feature of the underground space, maximizing the communication effect and ultimately realizing the pan-connection of immersive media.

It is also possible to make full use of the space in the underground carriage to set up a scene with a certain theme. For example, in Japan's IKEA Tachikawa shop, by implanting IKEA-related products, such as handrails, chairs, and windows, in the underground carriage, passengers are made to feel like they are walking into a mobile IKEA underground shop. The real-life scenes resonated with passengers, while the virtual scenes generated a lot of buzzes.

It is also possible to cover the inner and outer compartments with graphics to create an immersive special train causing a perceptual system for passengers. The train can be divided into three main special trains depending on the content of the communication. For example, in 2017, NetEase Cloud Music cooperated with Hangzhou Metro Line 1 to launch a campaign with the theme of "See the power of music". 85 classic comments were selected from 400 million comments in the background and covered the carriages. Scenic trains, such as the Hong Kong Disneyland underground train, are decorated with the Disney Blue logo, with blue corner fabric sofas, cartoon character pull tabs, and Mickey Mouse window shapes. Public interest trains, such as Stockholm's Oprylanden station, which worked with the Swedish Children's Cancer Fund to produce an interactive advertisement in which miniature sensors sense and display the dynamic effect of a 14-year-old girl with cancer's hair being blown down by the wind on the advertising screen as the underground enters the station, which was uploaded to YouTube and attracted over 450,000 underground passengers to view it. The fusion of commerce and public interest with full awareness communication will become the mainstream of the future.

6 Trend in Immersive Communication in the Metro Media

6.1 Targeting Passengers by Relying on User Portraits

Cloud computing and big data are changing the communication mode of traditional media, from people looking for information to information looking for people. The passenger flow of the metro is so huge that passengers have dual roles. The collected user profiles are classified, user behavior is analyzed, user bias is explored, and the target passengers are finally targeted and then disseminated to the users through the metro media, serving as a bridge between the information and the users.

6.2 Relying on Creative Content Rather Than Being Confined to Form

Powerful content is more important than the form of communication. The POLO communication campaigns mentioned above, NetEase Cloud Music, and the Swedish Cancer Fund are all based on innovative perspectives, ideas, and love, and attract passengers by conveying positive social energy, so innovative content that reflects excellent regional culture will become a major trend in future metro communication.

6.3 How to Make Better Use of Information Technology

The current application of information technology in the metro sector is gradually gaining popularity, such as designing metro routes with the help of artificial intelligence,

blockchain, and sensors. The next 10 years will be a decade of information technology development. How to better utilize new technologies to spread metro culture will be a question people need to think about.

6.4 Defining the Subject of Metro Media Management

Communication in the metro is currently dominated by commercial communication, while public service and cultural communication is weak. However, the metro, as a symbol of urban culture, must take on the responsibility of being a cultural medium. It is possible to refer to international metro companies and set up a cultural management department to coordinate the cultural communication of the metro, forming a comprehensive operational structure and communication model. This will allow for a three-dimensional, multi-dimensional, positive, and sustainable communication of metro culture.

7 Conclusion

Through effective management mechanisms and information technology support, the immersion and scenario-based form of communication in the metro station domain is further realized, enabling the effective dissemination of urban culture. And create multi-path communication, which is of great significance to promoting socialist values and enhancing public literacy and spiritual civilization.

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