Scenario-based Construction and Dissemination of Digital Memory

-- A Case Study of NetEase Cloud Music's "Annual Listening Report"

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Abstract. In recent years, the number of APP "annual report" has surged and there is a trend of flooding, but NetEase Cloud Music "Annual Listening Report" has been become a household name, widely praised. In this paper, case analysis, semi-structured interview and text analysis are adopted to conduct in-depth interviews with 15 NetEase Cloud users. Based on the triple structure of "scene-symbol-ritual", the annual listening report of NetEase Cloud is analyzed, and it is found that NetEase Cloud constructs scenarioized digital memory from three dimensions: scene recall, symbol meaning and ritual resonance. It achieves brand communication while strengthening users' emotional identity, and achieves good communication effect. At the same time, it points out the potential problems of quantifying personal preference and data privacy infringement in the annual listening report.

Keywords: Digital Memory; The Scene; NetEase Cloud Music "Annual Listening Report".

1. Introduction

With the rapid development of information technology and digitalization, our society has stepped into the era of memory 4.0, and the digitalization process of memory has become an irreversible trend [1]. With the trend of digital survival, the field of memory has also changed from the earliest physical substance to virtual existence, and people are more inclined to store and construct memories in the virtual space of the network [2]. People's behaviors and habits are more and more recorded by data. "Memory" no longer exists in the form of limited preservation, but is fixed and stored in the form of data, becoming a kind of digital memory that can be retained for a long time.

In recent years, the "annual report" of APP individuals has attracted wide attention and discussion on the Internet platform.At the end of each year and the beginning of the year, major apps compete to launch personal annual reports in the form of year-end summary, take inventory of users' footprints and review the history of the past year. The "annual report" of domestic apps can be traced back to the "Annual Bill" released by Alipay in 2013. However, it was not until the beginning of 2018 that the "Annual User Listening Report" launched by NetEase Cloud Music really set off the trend of "annual report" [3]. Payment, shopping, entertainment and even learning software all launched "annual report" successively. The so-called "annual report" of a user is to record the behavior information and usage data generated by the user's use of the APP for a year, and then use intelligent algorithms to analyze it to generate a "digital" memory exclusive to the user.

Although the number of APP "annual reports" has soared in recent years and there is a trend of flooding, the "Annual Listening Report" released by NetEase Cloud Music every year can make itself known outside of fixed circle, prompting users to independently repost it across platforms on a large scale, forming a "screen flooding" phenomenon, which has become an essential "ritual" for new media users at the end of the year. The "Annual Listening Report" of NetEase Cloud shows the successful path of scenario-based construction of digital memory and achieves good communication effect.Therefore, this paper will take the annual report of NetEase Cloud as an example to explore the path and effect it has achieved in constructing digital memory for users, reflect on the potential problems, and provide reference paths and enlightenment for other apps.

2. Literature Review and Definition of Related Concepts

2.1 Number Memory

The existing domestic research on the concept of "digital memory" is not clear, and most of it is directly applied rather than explained. Scholar Feng Huiling (2020) believes that digital memory is a cultural memory in digital form, which carries various genes and characteristics of cultural memory and digital information. It is a form of memory in which historical and cultural information of specific objects is collected, organized, stored and displayed digitally, and carried, reproduced and transmitted in cyberspace [4]. Broadly speaking, information about human activities recorded in digital codes can be said to be digital memory.Scholar Li Fuqiang (2021) defined "digital memory" as human memory in digital form in his research, that is, all the information about human social activities encapsulated in digital technology [5]. This definition focuses on the presentation form and way of digital memory. Based on the definition of the above concepts, this paper holds that "digital memory" is a human memory presented in digital form and carrying cultural information.

2.2 Scene

The word "scene" is defined by Goffman as "the physical space concept of the entity"; Merowitz proposed "media scenario theory" and introduced "information acquisition mode", believing that scene is not only a kind of spatial orientation, but also a kind of feeling area, which is created by media information, behavior and psychological environment [6]. Scholar Peng LAN (2015) believes that scene is not only a spatial location orientation, but also contains environmental features related to specific space or behavior, as well as human behavior patterns and interaction patterns in this environment [7]. This interpretation is widely recognized by the academic community.

2.3 NetEase Cloud "Annual Listening Report"

As a universal "symbol", the annual report not only meets the needs of users, but also realizes the dissemination of social media brands [3]. At present, the domestic research on NetEase Cloud "Annual Listening Report" covers a variety of research methods and perspectives.

Scholar Min Lingxin (2022) discussed the operation mode of NetEase Cloud Music from the perspective of the three focal points of scenario-based thinking in practice. She believed that the annual listening report played a role in improving the scene radiation and scene service by providing insight into user needs and stimulating emotional experience, and reflected on the defects in the transformation process of NetEase Cloud scenario-based.NetEase Cloud annual listening report can spread throughout the Internet and spread quickly on various social platforms every time it is released. In view of the popularity of annual reports on social media, researcher Guo Rong (2021) explores the reasons for the popularity of annual reports on NetEase Cloud based on the theory of use and satisfaction, and analyzes how to achieve viral spread from both social and psychological aspects. With regard to the “screen flooding” phenomenon of NetEase Cloud annual listening report in 2021, scholar Jiang Wenyu (2022) studied the causes of scree-scrolling events from the perspective of drama theory, adopted participatory observation, interview and text analysis, analyzed the two elements of the occurrence place and participants, and believed that the launch of the annual report provided users with an opportunity to present themselves. The social media platform provides a stage for users to act out, with concerns and suggestions about the "acting behavior" of users in the event of scrolling. As for the construction of users' self-image, researcher Wei Zhuo (2022), based on Lacan's mirror theory, adopted the in-depth interview method to analyze the construction of users' self-image in NetEase Cloud annual report from the two dimensions of independent self and dependent self, and pointed out the lack of objectivity.

From the perspective of brand operation and user data self, previous studies have explored the successful operation mode of NetEase Cloud Music, as well as the self-presentation and image construction of users in the annual listening report, and analyzed the reasons for the phenomenon of "screen flooding". However, current studies pay little attention to the construction of digital memory

and its own characteristics of the annual listening report, lack of analysis of the effect of the construction of digital memory, and the reflection on the infringement of user privacy is relatively thin.

This study will focus on the problem of how to construct digital memory in NetEase Cloud Music annual listening report. It adopts case analysis, text analysis and interview method to analyze the triple structure of "scene-symbol-ritual", discusses its communication effect, and reflects on potential problems that may infringe users' rights and interests in the annual listening report and puts forward suggestions.In this study, 15 NetEase Cloud Music users were selected for semi-structured interviews, and the interview objects were further questioned around the following questions and combined with the actual situation.

Table 1. Interview outline

Problem number	Interview question
1	Do you repost and share your annual listening report?
2	What platform will the annual listening report be forwarded to? What kind of response do you expect?
3	What's your favorite part of the annual listening report?
4	How do you feel when you check your annual listening report?

3. Scenario-based Digital Memory Construction of Netease Cloud's Annual Listening Report

NetEase Cloud Music "Annual Listening Report" generates personalized annual reports for users according to the number and duration of listening songs, listening time, number of single cycles and musical style types, and constructs objective data into user-centered digital memory by steps from three dimensions: scene recall, symbolic meaning and ritual resonance.Make the memories of the past year concrete and tangible.

3.1 Scene: Virtual Space and Recall Trigger

With the widespread use of the word "scene", some scholars divide the scene into physical scene and virtual scene, believing that it is represented by three dimensions: time, space and user psychology [8]. The construction of digital memory in NetEase Cloud annual listening report is mainly based on the virtual space of the network, which is carried out from the two dimensions of time and space, and accurately grasses the psychological characteristics of users.

NetEase Cloud annual listening report uses the interactive page of H5 interactive technology to build a virtual network space scene for the performance of digital memory. The 2021 annual listening report builds a virtual "Cloud village world" for users. Users first need to choose their personal image, and then follow the guidance of "guider", "time ferry " and "Cloud village elder" as "villagers" to start a journey back to the past. The promotion of dialogue enhances the sense of interaction and participation of users. The story-oriented and scene-oriented presentation quickly brings users into a specific scene and enables users to gain the immersive experience of "virtual presence".The construction of the virtual scene triggers the real memory scene through the music story of "Cloud Village", which provides a space for users to transmit memories and emotions.

NetEase Cloud annual listening report also selected special time nodes in the massive data to build digital memory from the time dimension.The annual listening report usually extracts data such as "the first time to use NetEase Cloud", "which day is the latest to listen to songs" and "which day has the most number of single cycles", and describes them as "the most special day", which is used as the trigger point for users to enter the past memory scene and help users to relive the mood at that time.The 2022 annual listening report also reviews the singers of the year for three years to show how users' preferences have changed, and the comparison of "change and unchanged" constructs recall

triggers from a wider time dimension, triggering associations with memories. At this time, the data is no longer just a string of serious and cold numbers, but closely linked with users' memories and emotions, which can stimulate users' emotional resonance and convey sincere and warm emotional power.

3.2 Symbols: Linguistic Landscape and Auditory Awakening

The annual listening report launched by NetEase Cloud Music is to turn users' music listening behavior into concrete and tangible symbols [9].In the process of symbolization, NetEase Cloud Music fully mobilize the user's sensory experience, through the presentation of visual symbols and sound symbols, the objective data is given special significance, so that users can obtain a good emotional experience and stimulate emotional resonance.The French scholar Guy Debord first put forward the word "landscape" in his book "Landscape Society", which originally means "a visible objective scenery or scene that is displayed, and also refers to a subjective and conscious performance and show" [10]. In the Internet era, as a kind of non-typical language landscape, network language landscape is an important way for people to understand network culture in a specific context [11]. The language landscape in NetEase Cloud's annual listening report is mainly reflected in the mindful copywriting design, which guides and awakens users' memory through text:

1) The selection of themes and copywriting in NetEase Cloud's annual report constitutes an important language landscape and plays a role in scene introduction.The themes of the 2020, 2021 and 2022 listening reports are respectively "Meet yourself in time", "Music remembers all the memories" and "Every emotion is true", which are simple and plain but directly touch people's hearts.They pay attention to the mining of users' emotions and the response of warm concerns, with strong appeal.The 2022 annual report begins with "How do we describe 2022?Eat, sleep, care about the world, change leads to anxiety... "At the beginning, just a few sentences accurately capture the common emotions and feelings of users, establish a common emotional significance space, and quickly bring users into the recall situation.The annual listening report of NetEase Cloud helps users tell the story behind the music through sincere and touching copy with distinct style, which deepens the emotional connection between users and the platform.

2) Another significant feature of the language landscape of NetEase Cloud annual listening report is to label the data with summary nature, which more intuitively presents users' personalized annual memory. The 2022 annual listening report launched the section of "four seasons listening mood". By analyzing users' listening data in four seasons, it gives different stylized titles of "four seasons mood", such as "going for a romantic escape", "like the autumn sunset", " A big fan of OST ", "sober and crazy", etc.A personalized language landscape is constructed by combining Internet hot words and highly romantic language to awaken users' "memories of the four seasons".

NetEase Cloud Music as an audio media, the presentation of sound symbols is the most important and direct way to communicate with users. Although the presentation of visual symbols can provide users with direct sensory stimulation through copywriting and page design, it has a strong appeal; But vision is independent of our bodies compared to hearing, which is a more aggressive form of communication, in which sound floods into the recipient's body and can elicit more intense, visceral emotions.

The annual listening report is usually supplemented by soft and soothing background music, which awakens the emotional memory of users and quickly brings users into the constructed virtual scene, enabling users to gain a more immersive experience and quickly trigger emotional resonance. Each year, the annual listening report will match different background music according to different themes. For example, the lively page design of the 2021 annual Listening report will match light and melodious music, creating an atmosphere for the unfolding of the story scene. Recently, NetEase Cloud also launched the "Ten-year Listening Report", which traces users' listening history in the past ten years. Different from the regular annual report, the " Ten-year Listening Report " is mainly presented by auditory means, playing users' favorite songs of the year one by one, providing users with a "time machine" to go back to the past, embedding music directly into users' digital memory,

triggering real memories and resonance through music memory. " Almost every song can remind me of the mood, people and things I experienced when I listened to it " (interviewee 8). When the music once loved most is played again, the emotions and memories it carries will still give power to users across time and space.

3.3 Ritual: the Common Memory of Interest-related Groups

According to Collins, the core mechanism of interactive rituals is mutual attention and emotional connection, based on which individual emotional energy and a sense of group unity are generated [9]. It is worth noting that the annual listening report of NetEase Cloud not only focuses on the personal memory of users, but also gathers independent users in a common significance space, creating a common memory belonging to NetEase Cloud interest-related group around deep loyal users.

NetEase Cloud Music attaches importance to the creation of a sense of belonging and companionship when constructing digital memory for users.For example, users can choose to join a fan group when viewing "Singer of the Year", or display people with similar music taste when viewing "song of the Year", telling users that "there is a person in the same category". The annual listening report focuses on music and users' interests to establish emotional connections between users and stimulate similar emotional experiences.In the 2022 annual listening report, NetEase Cloud made a new attempt to set up a virtual space scene of "empty mind online" to "bring everyone together". All online users can listen to music, empty themselves and express their feelings together, and realize the virtual gathering of NetEase Cloud interest-related groups [12]. Users can also share and repost the song listening reports on the topic entries in the NetEase Cloud APP and other social platforms, generating emotional resonance in the process of self-expression and concern for others. Gathering and interaction make personal digital memory integrated into the common memory of interst-related groups.

At the end of each year, the interest-related group formed around NetEase Cloud Music will gather in the digital memories constructed by the annual listening report as the "villagers of Cloud Village", share the same emotional experience, participate in and witness their "ritual" together.The annual listening report of NetEase Cloud establishes a common meaning space for users, breaks the limitation of time and space to form an emotional community, integrates personal digital memory into the collective common memory, and realizes emotional sharing.

4. Positive Effect of Scene Construction of Digital Memory

The annual listening report of NetEase Cloud always focuses on the emotional needs of users, constructs a scenarized digital memory for users, and continues its concept of "music socializing", encourages users to share and spread on different platforms, forming a "screen flooding" phenomenon, which has achieved good results.

4.1 Brand: Strengthen Brand Image and Gather User Emotion

With the accurate insight into the user's psychological characteristics and the accurate grasp of the internal needs, the NetEase Cloud Music annual listening report builds the scenarized digital memory for users, so that users can obtain a sense of satisfaction and good emotional experience in the past process, which leads to the independent cross-platform communication of users.In the process of secondary dissemination, the annual listening report brought a huge amount of traffic and attention to NetEase Cloud Music, which successfully strengthened the brand image rapidly on different social media platforms, expanded the sound volume and brand influence of the event, and attracted more users' attention and use.

In addition, the annual listening report of NetEase Cloud is customized to the user's annual memory by strengthening the emotional connection and causing emotional resonance, which has maintained the existing large scale of users. The design of scenes and symbols in the annual listening report all emphasize on conveying the concept of long-term companionship and warm care for users, reducing

the psychological distance with users, deepening the brand image of sincerity, heart-moving and warmth among the existing user groups, and deepening the emotional connection with users. "I think NetEase Cloud is very sentimental, every year is a wave of memories" (interviewee 2). NetEase Cloud Music's continuous innovation and upgrade of the annual listening report will also continue to tap the deep needs of users, improve user stickiness, gather users' feelings and consensus on the brand, and obtain long-term development power.

4.2 Users: Convey Spiritual Healing and Meet the Needs of Belonging

On the one hand, the personalized digital memory of NetEase Cloud Music focusing on user psychological customization can enable users to absorb the emotional power of relaxation and healing.The annual listening report of NetEase Cloud gives special meaning to data and labels users with appreciation. Users can get their "annual keywords", "four seasons emotions", "music spirit", "music soul" and so on in the retrospective process. The labels that accurately match users' preferences will trigger a strong sense of resonance and make users get the feeling of "being understood". Interviewee 12 said that "I like the interpretation of 'music spirit' the most, and I feel that I am seen".In the fast-paced, stressful modern society, it provides users with a "haven" for temporary relaxation, and conveys the power of spiritual healing and spiritual comfort through music.

On the other hand, the social behavior of reposting and sharing the annual listening report satisfies users' inner needs for a sense of belonging and identity. In the age of network social communication, the media use behavior of netizens is actually a way of self-presentation. Behind the personal language representation and behavior characteristics are the potential psychological motivation and role desire of individuals [9]. According to Maslow's hierarchy of needs theory, people need to establish emotional relationships and connections with society and others, and have a desire for "belonging and love". Interviewee 5 said, "NetEase Cloud's approach has brought us closer to each other's emotional connection, which is hard to feel in the current relationship between society and people." The annual listening report of NetEase Cloud satisfies the user's desire for a sense of belonging by reflecting the user's personalized image and sense of membership, and also provides the means for users to perform their personal image and construct their identity in the Internet space. Users can selectively post their annual listening reports, build personalized "ideal" selves in the process of sharing and interaction, and seek self-confirmation and identity in the community gathered around the listening reports.

5. Reflection

5.1 "Ratings" -- Quantified Personal Preferences

"Listening to music", originally, is a very private and personalized behavior, is a kind of individual preferences, there is no unified evaluation standard. However, as the "Annual Listening Report" has acquired social attributes, "listening to music" has also become a social means for users to show their personal image.The "Style of Music" section in the 2022 "Annual Listening report" scores the user's listening taste, and calculates the proportion of users who exceed it, so as to label the listening preference as "more public" or "less public". Through "score" and "proportion" to present the taste of listening to songs, the user's personal preferences are digitized and labeled, the subjective and highly differentiated hobbies are ossified in the algorithm scoring system, and the preference of personal taste is quantified with unified standards and numbers.

From the user's point of view, people with " less public " tastes may be evaluated as "unique and distinctive" by the system, catering to the user's desire to be unique, but for users labeled as " more public " or with lower scores of music style, the inner satisfaction will be greatly reduced. In this regard, the APP can change the scoring system to the description of different characteristics of users. Both "public" and "minority" represent a kind of personalized preference for listening songs, to meet different users' inner needs for self-identification.

5.2 Data Privacy Utilization -- Insensitive Infringement

According to Goffman's scenarioism theory, user privacy data belongs to background information and needs to be strictly hidden, but in order to effectively meet the requirements of the scene, the user's personal information and behavior trajectory are completely recorded [13]. The generation of annual report requires the mobilization of a large number of users' personal identity information and behavior information, including listening songs, number of cycles, favorites and comments, and on this basis, accurate analysis of users' preferences and usage habits will be conducted. Therefore, privacy ethical dilemmas cannot be avoided.For example, the "Information Authorization Agreement" before viewing the annual report is automatically checked, the font is small and the location is hidden;The content of the privacy authorization agreement is also relatively simple, and does not provide users with effective ways to protect their rights and clear privacy protection measures.Due to the excessive complexity of data and the hidden use of data, users gradually lose control of their personal privacy, and the infringement of privacy gradually changes from "sensitive" to "insensitive", which is not conducive to the protection of data privacy.

Therefore, it is urgent for APP to further improve the protection of user data privacy in the process of generating "annual report". First of all, the platform should refine and supplement the privacy protection agreement, and provide smooth and efficient channels for users to safeguard their rights. Secondly, the platform should strengthen the protection of user privacy, strictly check the use of user data, and put an end to privacy purchase behavior.

6. Conclusion

Through case analysis, text analysis and semi-structured interview, this study found that NetEase Cloud Music "Annual Listening Music Report" successfully constructed scenarioized digital memory for users by constructing memory scenes, endows symbolic meaning and arouses emotional resonance. Through emotional penetration, it strengthens the emotional bond between the brand and users, realizes brand communication while strengthening the emotional identity of users, builds a sincere and heart-warming brand image, and maintains strong vitality and influence in the increasingly widespread "annual report".At the same time, the annual report of NetEase Cloud also has the problems of quantifying personal preferences through "scoring" and potential data privacy infringement, which can be improved to provide users with better services.

In this paper, there are still limitations in the research on the construction of digital memory of NetEase Cloud's "annual listening report", which only adopts qualitative research methods without quantitative research data for further evidence. In the next step, a large number of data can be collected through questionnaire survey, and the research of this paper can be improved through comparison and analysis of data.

References

[1] Shao Peng, “Memory 4.0: The End Result of Digital Memory and Human Memory”, Journalism University,2016(05):67-72+149.

[2] Lu Xiaohua, Li Huan, “Spatial migration, image reconstruction and Ritual interaction: A study on the construction of cultural Memory in WeChat mini program ‘Digital Forbidden City’”, New media research, 2021, 7 (21): 84-86 + 95. DOI: 10.16604 / j. carol carroll nki issn2096-0360.2021.21.021.

[3] Wei Zhuo, “Research on User self-image construction in NetEase Cloud Music Annual Listening Music Report”, New media research, 2022, 8 (12): 80-82 + 86. DOI: 10.16604 / j. carol carroll nki issn2096-0360. 2022.12.001.

[4] Hui-ling Feng, “Digital memory: cultural digital palace”, Journal of Chinese library, 2020 46-48 (03): 4-16. DOI: 10.13530 / j. carol carroll nki jlis. 2020019.

[5] Li Fuqiang, “Immortality, Death and Love: Reflection and Criticism of Digital Memory”, Haihe Media, 2021 (06):26-29.

[6] CAI Fei, “The Rise of the concept of ‘Scene’”, Chinese Journal of Social Science,2017-04-20(003).

[7] Peng Lan, “Scene: the era of mobile media of the new elements”, Press, 2015 (3): 20 to 27 DOI: 10.16057 / j. carol carroll nki/g2.2015.03.003 31-1171.

[8] Wang Junfeng, “Scene Music: A New Mode of Music Communication Based on User Scene”, Media, 2016 (21):66-68.

[9] Yang Ping, “Self-presentation and identity in online social networking from the perspective of Interactive ritual chain: Starting from NetEase Cloud Music Annual Listening Report”, New media research, 2018, 4 (5): 29-31, DOI: 10.16604 / j. carol carroll nki issn2096-0360.2018.05.011.

[10] Guy Debau, “Landscape Social Review”, Translated by Liang Hong, Guilin: Guangxi Normal University Press,2007: Preface 4-5.

[11] Zheng Yanfang, “Research on the discourse ecology of Network Variety Shows from the perspective of Linguistic Landscape Science: A case study of the poster of iQiyi”, New media research, 2023, 9 (01): 117-120 + 124. DOI: 10.16604 / j. carol carroll nki issn2096-0360.2023.01.018.

[12] Xie Yanglin, “Research on Interactive Ritual Chain of mobile music social platform -- Taking NetEase Cloud Music as an example”, New media research, 2022, 8 (10): 98-101. The DOI: 10.16604 / j. carol carroll nki issn2096-0360.2022.10.005.

[13] Min Lingxin, “Analysis on operation mode of intelligent audio media in scene era -- Taking NetEase Cloud Music as an example”, Media Forum, 2002,5(24):80-84.