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To Create More Vivid Experience: Information Generation and Dissemination by Display Design in Urban Planning Halls

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This article focuses on the study of display design, with respect to its information generation and dissemination from the perspective of its audience experience. It takes as an example the information generation and dissemination by display designs in urban planning halls and analyzes them in three respects: attractiveness, intelligibility, and adequacy of information generation. It then develops the information experience–building strategy based on the emotional elements, judgment elements, and compound elements that constitute the experience. The study aims to form a feasible path to improving the audience experience of urban planning halls effectively, in terms of the provision of information, in order to enhance the attractiveness of its display design and make the public more willing to go to urban planning halls.

Keywords: experience; urban planning halls; display design; information

Introduction

Information is about how matter exists and the state in which matter displays itself (Wu, 2005). The design of information display is a link between exhibits and people, and the information needs to be sorted, processed, and transmitted to the audience according to the particular certain space and medium. The term ‘display design’ refers to the comprehensive activity of information dissemination, that is, the work carried out with regard to conveying the information intended by the expresser of it and making it understood by the audience (Shi, Ma, & Dong, 2005). As a location to analyze the generation and dissemination of display information from the perspective of the
audience’s experience, the planning hall serves as a real and vivid exemplar and is thus a useful place to conduct research. In addition, the information presented in the planning hall relates to the city, so the information about dynamic and complex urban development and professional planning can only be used to display information after being re-organized and optimized. The majority of us live and work in cities, so a city’s planning and development are closely related to our lives. Thus, as a research subject, the urban planning hall has significance in both a theoretical and a practical sense.

Analysis of and Reflection on the Dilemma of the Urban Planning Hall during Rapid Urbanization

Current Development of the Planning Hall
Driven by more than 30 years’ of reform and opening up, China’s urbanization has made important progress. According to the National Bureau of Statistics, China’s urbanization rate had reached 56.1% by late 2015 (Zhao, 2016). Along with the developing urbanization process, the promotion and display of urban planning and construction have increasingly gained the attention of society. The years around 2000 saw the rapid growth of the urban planning exhibition hall, a new type of professional venue, alongside urbanization. The urban planning hall is also known as the urban exhibition hall, urban planning hall, exhibition hall, etc. It is described in Ren’s Urban Culture and Urban Planning Design as having the important task of showing the public the guiding ideology, research findings, preparation process, planning blueprints, demonstration models, scientific indicators, implementation effects, and practical experiences of urban planning, enabling people to perceive closely what the plans are, what effects they will have on the city in which they live, and how life in the future compares with that in the past and the present, in such a way as to promote understanding of the plans and to encourage people to follow and take part in urban planning (Ren, 2012).

Analysis of the Dilemma of the Urban Planning Hall
First, thanks to the internet and to convenient and highly developed transportation, people may quickly and easily access the relevant information without having to go to the planning hall. Second, the vast range of cultural, leisure, and entertainment venues that have cropped up in recent years means that the public has an increased number of options, reducing the relative attractiveness of a trip to the planning hall. Another factor that cannot be ignored is the convergence trend, brought about by rapid urbanization, which has led to the unification of display design in many planning halls. This homogenization makes the visit tedious. The relatively short development history of this type of planning hall also adds to the natural shortage of management and operational experience in this respect, resulting in a lack of highlights in public education and social activities.

The above compound factors have resulted in limited public willingness to visit planning halls or recognize them as places to visit, which affects the halls’ role in serving the community.
Experience-Oriented Coping Strategy

Creating an experience is an effective strategy in response to a society stuffed with homogenization and the best way to create value, argues B. Joseph Pine in his famous book The Experience Economy (Pine & Gilmore, 2016). Pine refers to the experience economy as the fourth economic form, after the agricultural economy, industrial economy, and service economy, as shown in Table 1. The museum exhibition design has undergone a revolution from the spaces for displaying objects to the environments for visitors experience (Falk & Dierking, 2000). As Kirchberg argued, the most important thing might be that the museum experience has a much larger effect on the visitor than one might have thought (Kirchberg & Trondle 2015). In this context, display design, like other industries that make up this society, needs to adjust the coping strategies designed to meet the demand of social development. Display design is gradually transforming from a material-oriented design, centering on exhibits, which emphasizes formality, satisfies the function, and pays great attention to logic, etc., to a paradigm that is people oriented and which creates a positive experience.

Table 1 Differences in Output between Different Economies (Pine)

<table>
<thead>
<tr>
<th>Economical output</th>
<th>Economic form</th>
<th>Economic functions</th>
<th>The nature of economic output</th>
<th>Main attributes</th>
<th>Supply mode</th>
<th>Seller</th>
<th>Buyer</th>
<th>Demand factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary products</td>
<td>Agricultural economy</td>
<td>Extract</td>
<td>Interchangeable</td>
<td>Nature</td>
<td>Bulk storage</td>
<td>bulk storage</td>
<td>Market</td>
<td>Features</td>
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<tr>
<td></td>
<td>Industrial economy</td>
<td>Manufacture</td>
<td>Tangible</td>
<td>Standardization</td>
<td>Post production inventory</td>
<td>Manufacturer</td>
<td>User</td>
<td>Function</td>
</tr>
<tr>
<td>Service</td>
<td>Service economy</td>
<td>Deliver</td>
<td>Intangible</td>
<td>Customization</td>
<td>Delivery on demand</td>
<td>Supplier</td>
<td>Custome r</td>
<td>Interest</td>
</tr>
<tr>
<td>Experience</td>
<td>Experience economy</td>
<td>Build</td>
<td>Recallable</td>
<td>Individualization</td>
<td>Periodic presentation</td>
<td>Builder</td>
<td>Custome r</td>
<td>Feeling</td>
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The display design of a planning hall promotes a city’s planning and development and provides a kind of general education, mainly to show audiences the miniature model, data, text, graphics, and video images that reflect the city’s construction. There are generally no exhibits and works of art here that easily arouse people’s esthetic tastes or move them in the way that traditional museums or art galleries do. An experience-oriented design strategy may display the information of the planning hall in a way that meets the audience’s psychological and emotional needs, creating a more vivid information experience, giving the audience a unique, personalized experience, improving the attractiveness of the urban planning hall, and increasing its social influence.
Experience-Oriented Display Information: Generation Principles
On the basis of Pine’s description of the experiential economy, display design information should have personalized attributes that will give the audience a pleasant experience and bring them valuable memories. Organizing the display information of an urban planning hall requires orderly discovery, organization, and dissemination, rather than a simple list and straightforward narration. Such information may provide the audience with a better experience, but only after having been carefully generated and organized. The principles for the generation of display information in an experience-oriented urban planning hall would balance the information's various factors, incorporate cultural uniqueness, give expression to emotion, and provide an interpretation that is readily understandable. As Figure 1 shows, cultural uniqueness emphasizes the differentiated strategy of display design in a planning hall, mainly composed of cultural elements, cultural temperament, and cultural origin, which create the unique taste and image of the planning hall. The understandability of the interpretation, from a cognitive perspective, requires specific modes of information organization and structure, including dramatized narrative, simplification, and symbolization. The principle of emotional expression means that information generated should be interesting and pleasant while also leading visitors to reflect on the information.

![Figure 1 Planning hall display information generation principles model](Image)

**Cultural Uniqueness Principle**
Uniqueness provides an important prerequisite for the identification of information as well as the basis for information differentiation. Only uniqueness can attract attention. Attention is the inevitable result of information processing with a limited capacity. The
number of objects we perceive in the world is far greater than the capacity of perceptual and cognitive processing of human observers. Therefore, in order to deal with the torrent of information, human beings can only selectively pay attention to some of the clues, while ignoring others (Solso, 2005).

Display space is not a standardized duplicate product, and uniqueness constitutes its charm in attracting people. The regional culture where a planning hall is located can form the unique quality required to display the design information of the planning hall. The urban planning hall, as an important place to reflect the planned construction of a city, will be affected by the regional culture of its location to some degree and will require that culture to be reflected. Tracing the understanding and application of the local regional culture, as well as the artistic reproduction of local customs, would be an effective way to shape distinctive information uniquely. The qualities of a regional culture with fresh features will better reflect the esthetic connotations and thematic interpretation of the display space. Figure 2 shows the design of an exhibition area in Huailai Planning Hall. It has a three-dimensional device with borrowed elements from the Octagon House, a famous local monument in Huailai. The information elements embedded in this Octagon House not only enrich the spatial effect of the exhibition area but also provide a unique cultural feature overall.

The information in this environment will be given a certain regional color, attribute, and meaning. For this purpose, the information generation of the display design for the urban planning hall calls for the rediscovery and application of the local traditional culture's image and spirit, to arm the display design of every urban planning hall with its own cultural origins and fresh attributes through the visual presentation and spiritual metaphor of the regional culture in the display space.

Figure 2  Step 1 is to collect and classify relevant regional and cultural elements. Step 2 is to select a feasible element based on the first stage. Step 3 is to conduct a creative and visual design of the identified element.
Interpretation Understandability Principle

- Information simplification.
  The design of a planning hall needs to take into account the space of the display and the time limit of the audience. In addition, the content of the information has to be refined and summarized, so that the audience can quickly grasp the information displayed. The following two methods can be utilized: the headlining of information and flat information delivery. Headlining of information. The urban planning hall is a public open space. It should be considered that the general audience tends to visit once, spends little time on each visit, and cannot afford to spend too much energy studying the content displayed in detail. This requires that the information be refined and generalized. Headlining is an effective way of generalizing information to allow the audience to obtain the concentrated essence of visual information in a short time. It is important to note that this display method avoids the use of professional terms and uses generalized language to enable the audience to understand and accept the information more easily and quickly. Flat information delivery. This is based on an audience’s linear visiting behavior. The hall is a space that audiences move through when visiting. The delivery of information as the audience proceeds through the hall enables the audiences to access the information dissemination points rapidly and sensitively. A complex, multi-layered structure should be avoided when organizing information to reduce the friction during information retrieval and increase information friendliness. In terms of the logical relating of information, significance should be attached to the relevance of the information and the efficiency of information dissemination. Furthermore, the audience’s demand for mobile information needs to be satisfied and the differentiation and superiority of spatial information cognition needs to be maximally demonstrated.

- Information symbolization.
  Symbols may represent certain types of information and have become an effective means for cognition and communication between people (Xu, 2008). In cognitive psychology, information processing takes cognition to mean the processing of information in a system, with that process involving the collection, storage, recording, conversion, extraction, and transmission of the information. The information is stored in the form of symbols, and the way it is encoded and stored will greatly affect whether the information will be easily used in the future (Galltiti, 2005). In the process of display design, information identification, coding, and dissemination are also focused on audience awareness.

The important goal of design is to create symbology. The information displayed in an urban planning hall will require symbolized encoding and conversion because many professional planning terms and items of information are difficult for a general audience to understand. It is necessary for this information to be modified in such a way that the public can understand and accept it.

With regard to the specific application of information symbols, it is important that the symbols used are instantly recognizable by the public at large and therefore should be those established by common usage, rather than symbols created by the subjective imagination of the designer. Experience-oriented information symbolization requires that information symbolization be considered in the current social context, allowing for
recognition of accepted symbols while combining with the current cognitive and esthetic goals, as well as with the actual environment of the urban planning hall. While reflecting authenticity and professionalism, this approach can improve the interestingness, esthetics, and readability of symbols to satisfy the cognitive requirements of non-professional audiences.

- Dramatized narration.

With regard to the individual information display, the next step is to have the audience interpret and understand the information, so selecting the appropriate narrative approach to the information may improve the audience’s cognitive experience. Dramatized narration and information exchange are very natural and rich approaches. A good story is often rich in plots, providing a stable carrier for the narration, on which experience can be built and experienced from multiple perspectives (Wurman, 2001). Dramatization is used for information generation in the planning hall to combine all the fragmented information into a coherent whole and can also link the audience’s understanding of the process by which the information is generated. Thus, the story is not only about the transfer of information but also about the active mechanism of making contact with different kinds of people (Quesenbery & Brooks, 2014).

The dramatized narrative is used to expand the display of information, the script being constructed with time and space as the background of the staging and information as the actor. It should be noted here that, for the visitors as the audience, listening to a story is not a one-way reception process. The visitors will create their own ideas in their own understanding of the story while listening and will think of their own life experience to establish imaginary links. By using the narrative approach to explaining the motivation or purpose of planning, the display information generated is presented in story form. The story’s narrativity may be used to trigger the imagination of the visitors, help them break through an intuitive leap of linear logic, and stimulate new imaginative thoughts to fill gaps in understanding.

*Emotional expression principle.*

Emotion forms our experience. It is a process that directs decision making, controls the attention, and strengthens some memories while weakening others (Gorp & Adams, 2014). Experience-oriented display information needs to take into consideration the psychological and emotional needs of the audience. When visiting the planning hall, the audience may easily become fatigued by the progress of time and physical exhaustion, gradually losing interest in the display information. Only display information that engages visitors emotionally can continue to arouse their interest, attract their attention, stimulate their perceptive desire, and leave a profound and beautiful memory.

- Pleasure.

To most visitors, the trip to an exhibition hall means having a pleasant time. The visit should provide a comfortable experience and enable visitors to receive the displayed information in a pleasant state.
Museums are visited for various reasons: they offer the chance to experience new things, they provide a learning opportunity, and they are interesting, entertaining, exciting, and relaxing places where friends can come together (Black, 2011). Generating interest is an important aspect of the display information, since it is a precondition of producing pleasure in the visitor; interesting information directly stimulates reception, which helps to maintain audience attention. In terms of creativity, performance techniques such as cartoons, humor, caricature, implied meaning, lyrics, etc., can be applied. With regard to visual design, such elements as shape, color, structure, texture, etc., can be utilized to make its character more novel and interesting.

Compared with other media, the display space of an urban planning hall has the advantages of greater space and a greater variety of media integration resources, which may be used effectively to create different forms of information generation in order to meet the audience’s needs.

- Leading to reflection.

Norman (2005) divides design into three levels: sensory, behavioral, and reflective. In general, instinctive design focuses on intuition, behavior design cares about pleasure of use and efficiency, and reflective design concerns rationality and intellectuality. Norman believes that the level of reflection places a higher demand on design and that only in the level of reflection will the highest capacity of consciousness, emotion, mood, and cognition exist. Only from here can the full potential impact of thinking and emotion be experienced. Interpretation, understanding, and reasoning all depend on reflective capacity (Norman, 2005). Falk thinks the museum visitor experience is constructed within the mind of the visitor and expressed in the form of visitor satisfaction and memories (Falk, 2016). The display information not only needs to provide a unique character at the instinct level, giving audiences more efficient information organization at the level of behavior, but also needs to satisfy the audience’s deeper psychological experience at the level of reflection. Furthermore, it allows for a certain social, profound, and philosophical significance, so as to stimulate the audience to conduct greater in-depth thinking and to retain a long-term memory of the display information.

To Create a More Vivid Information Experience: Communication Techniques to Display Design Information in a Planning Hall

Information can be delivered to audiences through a variety of media, and contemporary society provides a wealth of technical choices and resources for information dissemination. The adoption of the appropriate method of dissemination on the basis of the audience’s perspective constitutes an effective way of improving the experience. In this strategy, the first step is to determine the key factors affecting the experience and then to optimize the design. Jinwoo Kim, a design scholar, believes that three elements have a major impact on the experience, namely, an emotional element, a judgment element, and a composite element (Kim, 2015).

Although an experience is a holistic event that cannot be simply broken down into elements, it may be classified and modified by intervention and operation in terms of the experience-affecting factors to produce a specific impact on the expected experience.
Improving the Emotional Experience

It is believed in cognitive psychology theory that feeling is mostly the initial reaction of the five senses—vision, hearing, taste, smell, and touch—to the physical world (Solso, 2005). Kim argues that the emotional element is significantly affected by a sense of existence. That is, the strength of the sense of existence has a direct impact on the emotional element of the experience, while the sense of existence itself is mainly influenced by external sensory stimulation (Kim, 2015). Moreover, narrative, concreteness, and media richness provide effective ways to improve the experience.

From the perspective of display design, emotional experience is the instinctive response of the audience to the first stage of the context stimulus, such as color, lighting, morphology, sound, etc. Then, in line with the logic of information processing, the audience will respond instinctively to the stimulus; for example, a red display environment may be more likely to make people feel excited, while blue may make them rational, and so on.

The planning hall is a space that invites audiences to enter. Digital virtual or physical scenery can be applied, as well as other features, to design an immersive information display space to give the audience a multi-channel stimulus, and to take the audience into the intended narrative context. In the concrete context created by the rich media resources and technology available, the audience experiences the dissemination of the information. Figures 3 and 4 present one example of an entrance space design for a planning hall. There is an attempt to integrate a water element into the design theme of the planning hall. No detailed display information can be found here; it is more of an attempt to create an atmosphere or mood. Once the visitor enters the exhibition hall, a sensor responds and the lighting goes dark. An LED screen above lights up and plays a video, accompanied by music. A dynamic device around the wall simulates sparkling water, and through a set of mechanical devices, a sense of wind can be produced. This will allow the audience to have an integrated, multi-channel experience through the senses of vision, hearing, and touch. In this way, the visitor can be quickly acclimatized to the required visit state, that is, taken from the real world into the experience space.

Enhancing the Judgment Experience

The term “judgment experience” refers to the act of evaluating or judging, It is mainly reflected in function satisfaction and pleasure of use brought by the design (Kim, 2015). In the specific case of information dissemination of a planning hall, it means the audience’s judgment of the efficiency, quality, and pleasure of the information experience, which can
be optimized and enhanced by means of technical integration and participatory interaction.

One of the directions in technology development is enhancement of the efficiency of tools. The advantages brought by technology integration can improve the efficiency of an audience’s information experience. The integration and coordination of technologies can be used breakthrough to eliminate the material obstacles to display information dissemination. Images, texts, videos, sounds, and objects can be combined organically with the help of innovation and the integration of technologies to increase the efficiency of information dissemination. A good example would be a sand table, principally used to show urban planning, that is organically integrated with intelligent lighting, images, sounds, and other different media. This enables the audience to have a more intuitive and faster understanding of the concepts, methods, and results of planning. Multi-channel integration renders the information displayed more stereoscopic, vivid, effective, and focused, providing the audience with an experience that is more efficient and pleasurable. Participatory interaction improves the quality and pleasure of an experience. Thanks to the highly developed internet and convenient mobile terminals, people are accustomed to actively controlling the choice and communication of information in a timely and convenient manner. Active choice is the distinctive feature of contemporary information interaction. In terms of information selection and value expectation, the experimenter achieves satisfaction and the pleasure of information interaction from the process of information dissemination. In this social context, when developing an information display, an interactive participatory experience is now both the norm and a requirement. This new behavioral trend must be recognized and satisfied in the information dissemination of a planning hall. The interactiveness of the information needs to be increased to meet the needs of the audience’s experience. Figure 5 shows a touch-query display system. The technical advantage of such a system is that it allows information that cannot be conveyed in the physical space to be stored and displayed in a digital way, which expands the capacity of information displayed virtually. Here, audiences can conduct in-depth inquiry, searching quickly and easily for the information of interest. This system not only allows for queries but can also sometimes set a number of theme-related questions and answers or interactive games, enhancing the knowledge and pleasure derived from the display. Figure 6 shows an interactive ride experience display system. In this system, musical effects and information feedback appear differently, in line with the audience’s changing pace, bringing the participant the experience of creating and controlling the information. During the interactive experience, the audience is drawn further into the context of the display information, leading to two-way information communication, producing information resonance, improving the cognitive effect, broadening the audience’s horizons, promoting thinking and imagination, enhancing memories of the disseminated information, and raising the quality of the information experience.
Harmony of the Composite Experience

The composite experience refer to the unity and coordination of various experiential elements, including human, goods, and environment. Coordination is the benchmark of the composite experience. The display information of a planning hall can be summarized as the time-space relationship and the relationship between the elements.

With regard to the time narrative of the display information of a planning hall, the context-matching and coordination of the history of the past, the reality of the moment, and the near future need to be taken into consideration. The time narrative calls for a combination of cultural value, social structure, and historical context under the present circumstances to carry out illation and innovation. In terms of information dissemination, balances need to be achieved on the proportion of display space, the content of the transition and transition, the way audiences behave and their habits, etc. For example, in practice, sometimes, in order to display as much information as possible, too much display information is presented in the available space, and the audience’s need to breaks is ignored, placing the audience in danger of being overwhelmed by the amount of information. With regard to circulation planning, great significance has to be attached to the audience’s reading habits, and the visit should be planned in a clockwise stream as far as possible to unify the order of the visit and the reading of the display.

In addition, the balance of relations among exhibits, information, space, audience, and other core elements needs to be unified to serve the common goal: the audience’s experience. At the peripheral level, there is a need to coordinate the environment, architecture, space, and display relationships. In terms of the internal display techniques and adoption of technologies, the element of human experience needs to be attended to in a comprehensive manner. Under some circumstances, the extensive application of new technology and new equipment in pursuit of novel effects will leave audiences confused about the visit and its operation, thus affecting the mood of the visit. There are other times when the atmosphere and effect of the space are overemphasized while the purpose of information dissemination is overlooked. As a result, the audience cannot understand the information and ideas displayed. Coordinating these contradictions entails thinking about how to deal with and handle them harmoniously.

There is no doubt that emotional, judgment, and composite elements that affect any experience are unavoidable, and sometimes their cross application, as well as their coordination and integration, is needed to improve the audience’s experience. The
advantages and limitations of various experiences should be analyzed and differentiated to provide a more appropriate selection strategy for information dissemination. Only with overall unity and coordination can we provide audiences with a better visitor experience.

Figure 7  Information generation and dissemination model.

Conclusion
Changing times bring new trends and requirements. In today’s China, every city is building its own planning hall. No doubt these facilities, built with huge investments of money, just like many other, similar museums, will face social service requirements and challenges upon completion and will ultimately be subject to testing by audiences. Whether an urban planning hall attracts an audience may, to some extent, be an important factor in determining how successful it will be. The urban planning hall is a relatively new type of exhibition hall that not only inherits history but also dynamically reflects the present society. In the society’s move toward the experience economy, information generation and dissemination of display design will conform to the needs of the society, changing from material-oriented displays to people-oriented experiences.

In terms of generating display design information, this means applying design principles that can create a more vivid visiting experience for the audience, constructing the information to be generated in such a way as to enable the audience to obtain a more vivid experience, and using the region’s unique culture in the planning hall to shape the uniqueness of the information conveyed. It is also important to engage the audience emotionally through the information presented in order to avoid tedium, while also ensuring the vividness of the information generated and pleasure brought to the audience. In light of the audience’s diverse experiences and the planning hall’s visiting hours, the information may be organized through dramatization, symbolization, and simplification to allow the audience to grasp it faster and more effectively. The generation
of display design information for an urban planning hall provides the basis for the dissemination of the information. The means of dissemination are the conditions through which the information is presented to the audience. Design techniques for the construction of an experience-based environment may present information in a more relevant immersive space, so that the audience is given a positive information experience in a simulated scene. For a technical approach, new media and new technologies may be used for integration, fusion, and innovation, allowing the audience to have two-way interaction and reconstruction with the displayed information, in a way that improves the efficiency and quality of the audience’s information experience, thereby creating a more vivid urban planning hall visitor experience and attracting more citizens to the venue.

References

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