Research on How Convergent Digital Media has Impacted the Social Space of Contemporary Cities

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Abstract. The integration of digital media has an important impact on the economic development, cultural development and spatial use of cities. This paper explains this idea from two main perspectives. The first is media architecture. The integration of media and architecture, supported by new technologies, is an indispensable step in modern urban planning. Media architecture can effectively increase the public's sense of participation and cultural identity. However, at the same time, too many media buildings can also bring huge information waste. Secondly, I will use the case of the Public Comment software to rethink what urban communication is. The interactive nature of digital media can both facilitate and hinder urban communication. How to grasp this scale is a question that needs to be addressed in public communication..

Keywords: digital media, cultural development, urban planning.

1. Media architecture

In the mid-1970s, electronic screens appeared on the streets and people were not understand its appearance. In the mid-1980s, with the development of visual technology, the technology of large screens were developed too, but they were very expensive and consumed a lot of electricity. If people have not had frequent access to large screens before, they are now the new building that every city has to have.

As an infrastructure of the city, urban screen is also the landscape of the city, representing the culture of the city. wherever people go, they can see screens. Unlike dynamic billboards, they do not easily change their location and external installations, so people sometimes even rely on them to determine their geographical location in the city. Urban screens create a new mix of media viewing spaces and social environments. The big screen can be distinguished from other common forms of media use in urban spaces, such as personal mobile devices, specifically by their fixity and collective orientation (McQuire, 2016). According to Joseph Stiglitz, the Nobel Prize winning economist, the two things that will have the greatest impact on all of humanity in the 21st century: one is the new technological revolution and the other is urbanization (zhou & Liu, 2003). The new media is a product of a high degree of urbanization, which at the same time has had a huge impact on urban space. It can be said that urban space and the multiplicity of forms of modern media influence and interpenetrate each other. New media technologies and applications have not abolished space, but have transformed it, and their impact has covered our cities, countries and even human society as a whole. Traditional outdoor screens as intermediaries for display advertising are far from being able to meet the development trend of modern smart cities. For the construction of urban spaces, public screens with modern features are not only versatile, but also integrate with buildings to form media architecture.

Large screens in public spaces have a unique potential to connect the public space as media platforms embedded in specific urban areas. The emergence of the screen is facilitating the emergence of a new kind of public space. It is the urban landscape and the urban culture. It is a new experience for the public from different cultural and educational backgrounds to share their lives with others in a public space. It promotes a richer public culture (Bentivegna & Artieri, 2020). Featherstone (2007) also argues that "cities have always had their own culture, creating distinctive cultural products, human landscapes, architecture and unique lifestyles. We can even say, with a culturally charged tone, that the spatial configurations of cities, the layout of buildings, are themselves the expression of specific cultural symbols.

Some of the large screens on buildings are used to broadcast non-profit advertisements or commemorate important events, etc. The large LED screen at Taiguli in Chengdu, for example, was a big hit on social media. This screen is a naked eye 3D curved screen with a total screen area of 888 square metres. The edges of the screen use curved smoothing technology to give the public a visual feast. To make the effect even more realistic, the spaceship travels from one end of the screen to the other with a loud sound. The theme of this digital art project is "Hello World". When it was first exhibited on Commercial Street, people took photos on their mobile phones and shared what they saw with their friends or posted it on social media. It was read by 320 million people on Weibo and discussed by 56,000 opinions. More importantly, the collective viewing experience gave people a sense of belonging to a group and a sense of cultural identity, with both material and human significance. And the collective viewing and sharing of urban space allows people to express themselves freely, giving rise to a temporary community of mutual exchange.



Figure 1. Picture source：Weibo

As can be seen from the example of the urban Screen in Chengdu, experiential nature is an important feature that distinguishes digital media from traditional media. In terms of the sensory dimension, paper media, as the primary form of traditional media, requires people to read in order to access information, so it can only engage people's visual senses. New media, on the other hand, can engage both the visual and auditory senses (Eysenck & Keane, 2005). Digital technology produces media forms that enhance the visual and auditory senses, while also invisibly increasing the sense of touch. This tactile sensation is different from the material texture that physical space provides, but is a psychological sense of touch between the individual and the virtual object. This sense of touch is achieved by sensors and is a two-way transmission between the media and the individual. I see this as another stage in the combination of digital technology, new media and screens—human-computer interaction.

"Body Movies (2001)" and "Airborne Projection (2013)" are two public space multimedia installations designed by artist Rafael Lozano Hemmer. The two devices can quickly capture the behavior of people in the square and then project it onto a media interface, creating dynamic images of interactions with people.The Body Movies project begins by taking thousands of portraits of people on the streets of the city, which are then displayed using robot-controlled projectors. The portraits appear only in the shadows of passengers and their silhouettes can reach between 2 and 25 metres, depending on how close they are to a light source on the ground. After all existing portrait images appears, it will trigger new portraits. The art is inspired by Samuel van Hoogstraten's engraving "Dance of Shadows". The author tries to use technology to evoke a sense of intimacy rather than provoke a sense of distance, obedience or awe.



Figure 2. Picture source: http://www.lozano-hemmer.com/body_movies.php

Airborne Projection project has more digital technology than previous projects after several years. In this project, participants block the light from two projectors and their shadows are projected onto a wall covering an area of approximately 900 square metres, after which the shadows are also tracked by a computer monitoring system. Smoke is then emitted from the shadows, which is mapped onto the wall and slowly builds up, eventually evaporating due to the heat of the body. The display of the moving images attracts the attention of passengers, who are tempted to make funny gestures that they would not normally make in public space. This art installation has dramatically changed people's behaviour in the square. As a result of the experiential feedback from the public space, passengers stay longer and the square is twice as crowded and much livelier than before.



Figure 3. Picture source: http://www.lozano-hemmer.com/airborne_projection.php

Mitchell (2005) argues that the relationship between screens and websites offers a way of "responding to the postcolonial, multicultural, public space issues of an electronically networked society" (p.44). However, such a conclusion may be overly optimistic. Screen is not only seen as part of a non-profit public activity, but also as a way of generating income. This means that while it occasionally displays public service activities, it is still used most of the time to display commercial advertising or business activities. Most of these screens are street screens, and businesses choose images with strong visual impact to attract the viewer's attention and make it a compelling geographical landmark. Secondly, it is versatile in shape and flexible in its malleability. Outdoor public screens often use LED technology, combining sound and light, and can display a variety of graphics and animations that are broadcast to audiences around. As street audiences are mobile rather than static, they often only spend a few seconds watching the advertisements on the screen, thus also posing the problem that screen advertising are becoming more and more numerous and multiplying rapidly in urban spaces. Especially in the commercial centre areas of the city, where they are broadcast very intensively, leading to a decrease in the impact of a single screen. The sheer volume of information but lack of filtering leads to a visual overload of the urban landscape and a large amount of information waste attached to urban spaces.

2. Urban communication

Fortunati (2002) argues that users feel comfortable exchanging intimate thoughts on their mobile phones in public because the other people present remain anonymous. Similarly, Tomita (2005) think that mobile phones allow users to be free in urban spaces because users are not restricted by their location. This shared and anonymous nature mitigates the threat to people, and can sometimes create a more interesting social environment. Due to anonymity, The social consequences of an individual's actions are temporary(Goffman, 1997).

If people need to know about a place then they have several ways of doing so. Firstly, people may get a first impression of a place through design, advertising etc. Then as people socialize, comments about the place spreads around and some places develop recognizable characteristics based on the customers who frequently visit. This is an established impression of a place. The characteristic of this approach is that the merchant has little control. At the same time, these customers themselves pass on the impression, either consciously or unconsciously. This phenomenon explains the recursive social production of space (Lefebvre, 1991) and spatial production of relations. In mobile societies, public and private life begin to intertwine. An unfamiliar place acquires familiarity through the appearance of one or more friends. Similarly, in a known place, unknown people may be considered acceptable. This social model is very much like the operation model of Public Comment software.

Public Comment (an app like yelp) founded in Shanghai in April 2003. It is China's leading local life information and trading platform, and is also the first third-party consumer review platform. It is a place for users to share their life experiences. Users, also known as raters of a shop, upload information about a restaurant with location, its aim is to provide food information to tourists or first-time visitors to the city. In addition, it provides users with information about businesses, as well as Online To Offline transactions such as group purchases, restaurant reservations, take-away services and electronic memberships. If you are a user who has not yet consumed and want to know about a certain restaurant or a city's food information, such as whether it is worth going to, what delicious specialties or shops are available, and whether there are some coupons, you can open the software and search by city or shop name. The platform will also recommend local famous shops and interesting food news based on your location. If you are a user who has already consumed, you can click into the merchant's page and then post a review of the merchant, either in the form of text, pictures or videos, and rate it.

The core of Public Comment is user information sharing. It has a strategy of adding new users and keep existing active users. For new users, the platform focuses on communicating the value of the product to new users. For example, it offers a wide range of content to meet their basic requirements. In addition to food, the platform also covers hotels, entertainment and other categories of content, allowing users to view merchant information under different categories. Apart from the basic address, spending and route planning shown in the page, the first thing that comes to the consumer's eyesight is the attractive pictures, recommended dishes and user comments, which are easy to reference for newcomers. In addition to this, the platform also segments the merchants, providing consumers with must-eat lists and top lists, so that users can quickly learn about local food and reduce the cost of trial and error. For active users who already exist, the platform is not worried about them giving up using the product as they already have a certain stickiness. So for this category of users, all the platform can do in terms of content is to add new content, new forms of interaction and personalized content to retain them. In addition to the basic comments and ratings, the platform has increased the number of topics and community forums. This part is an output of product-related content, which is displayed on the home page in the form of an information stream.

The results of the Public Comment study show that people are more likely to obtain location information indirectly (using software) rather than directly (asking strangers). This suggests that people actually prefer to get answers through indirect communication. Despite the proliferation of software and the frequent social interaction in the web interface, more and more users seem to prefer to get the information they need by avoiding direct contact. The survey results also show that the more people recommend the same restaurant, the more users feel that the restaurant is objectively

rated and therefore the more they trust the restaurant. In this sense, by accessing information created by others, users indirectly feel closer to the city and to its public spaces. The anonymously rated online friend becomes in a sense a location, or rather a location in which to become friendly.

Digital media has indeed facilitated the public in various ways and has played an invaluable role in the economic and cultural development of cities. But there are two sides to everything. After discussing its benefits, I would like to talk about its drawbacks.

Simmel (1950) states that public' indifference in metropolis was a cultivated expression, designed to protect oneself psychologically and socially from strangers in general. Similarly, Lehtonen and Mäenpää (1997) argue that the pleasure of street socialization comes from the uncertainty of events and the certainty that these events will belong to a known type of event. In short, these social theories argue that people balance differences for the sake of balance. The obvious side effect of these digital media interfaces is that a different type of social divide may emerge between those who have the right to access them and those who do not. It may no longer be caused by social class alone, but by positional awareness.

Looking at the broader context of public interaction, people like to use Public Comment not because they don't have friends in that city to ask, but because they are more likely to trust strangers on the internet as opposed to asking familiar people. Even though those strangers may be paid by businesses to write positive reviews. When confronted with a stranger's share, they will feel that the stranger is very enthusiastic and willing to share their favourite food freely. But if it's a friend sharing, many will subconsciously think about whether they have the same tastes as that friend. For the urban screen in Chengdu, even though the screen on the commercial streets are the largest in Chengdu, human interaction is still less. People come and go, watch the screens and then move on to their next destination. Although the light show uses the art of new media to attract people to gather on the street, this top-down approach to information dissemination only leaves the audience passive. On the other hand, most people rely on their mobile phones to watch and communicate. Even if they are standing right in front of the screen, their first reaction is to record it on their phones and then watch the spectacle through their phone lenses. Others neglect to communicate with those closest to them, instead constantly clicking like or commenting on posts made by others on Wechat. Therefore, how to better understand the interactive nature of urban digital media and increase opportunities for individual participation and group communication is an issue that needs to be addressed in public communication.

According to Lehtonen and Mäenpää (1997), sociality in the urban environment is created by a balance between trust and unpredictability. Urban spaces are places where unpredictable things can happen. Based on the invisible rules of street sociality, we have an inherent trust in others that allows us to walk comfortably on the street even if the people around us remain anonymous. This trust is usually based on the assumption that other people are like us and will therefore act like us. This is why people usually avoid places where they might encounter a more diverse population, because it can make it impossible to understand the social skills and social rules of those people. If you know that you are surrounded by people like you, you may trust that place and feel more comfortable there. If you have no guarantee that others will follow the invisible rules of street socialization, a fear of unexpected may occur (p.161).

3. Conclusion

New media has documented the history of urban space and its characteristics have reshaped our urban landscape, economy and culture, reshaping our urban spaces.The new media is like the 'nervous system' of the city, where the flow of information, together with the flow of people, goods, money and knowledge, plays a vital role in supporting the operation of the city. The new media era has changed the layout of urban space. Through electronic circuits, new media link isolated spaces in the city, making the spatial layout more shapeable and constituting new urban relationships and patterns. But at the same time, digital media is also a double-edged sword. While human interaction has

become easier, in a sense people are further away from each other than they were in the days of traditional media. How to balance digital media and urban public space is an issue that we need to pay attention to.

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