Community Is the Message: Viewing Networked Public Displays Through McLuhan's Lens of Figure and Ground

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ABSTRACT

Networked public displays are being portrayed as "a new communication medium for the 21st century", potentially having the same impact on society as radio, TV, and the Internet. In order to understand how this new medium can impact the society this paper uses a (small) part of Marshall McLuhan's media theory, i.e., the interplay between the figure - the medium - and the ground - the context in which the medium operates - and how the figure amplifies otherwise invisible effects of the ground. By analyzing environmental/urban research on interactions and processes in public spaces this paper infers the effects of the ground - public space - amplified through the figure - networked public displays - on its audience, showing *why* this new medium is fitted for affecting and enriching place-based communities. Overall, this paper contributes to the theory of networked urban/public displays and their use as a communication medium.

Categories and Subject Descriptors

H.4.3. [**Communications Applications**]: Bulletin boards; H.5.3. [**Group and Organization Interfaces**]: Theory and Models; H.5.1 Multimedia Information Systems;

General Terms

Theory

Keywords

Media theory; Networked public displays; Figure and ground

1. INTRODUCTION

Networked public displays are envisioned as a new and powerful communication medium for the 21st century, with potentially having the same impact on society as radio, TV, or the Internet [6]. This is not hard to imagine as large LCD panels are painting the urban landscape [14] and soon they will be connected over the Internet [6] allowing connections within and between different places. Moreover, researchers are reporting more and more on live test beds used to test the capabilities of this new medium [27, 28]. However, in the real world, outside of academia and beyond the innovative but often short-term work by artists, a vast majority of

these displays only show locally stored power points, images and videos, resulting in little attention from their potential audience [26]. In order to fulfill their potential as a communication medium and turn these ignored "ad" displays into something appreciated by its audience, we need to better understand the capabilities and effects such a medium may have on its intended audience.

Intuitively, 'content' seems to play a pivotal role in this understanding, as it is after all the predominance of advertisements that greatly affect (and negatively so) today's attitudes toward public displays [26]. However, recent research [34] revealed that content might not have that much impact on user engagement after all as passers-by are sometimes more interested in 'playing' with a public display and having a shared experience within the group. This points out the relevance of Marshall McLuhan, a pioneer in the development of communications studies and the founder of the media ecology movement, who argued that every medium has a message, regardless of its content [16]. According to McLuhan, the key to understanding the effects of a medium is to understand the interaction between the figure – the medium – and the ground – the context in which it operates – and the way the figure brings into the foreground otherwise invisible effects happening within the ground [17]. Hence, in order to better understand the "message" of the medium – networked public displays – we look into research on processes and interactions in public spaces, with the aim to shed light on how the figure (networked public displays) amplifies the effects of the ground (the public space).

This paper makes a contribution to the theory of networked public displays and their use as a communication medium, in particular motivating work on networked public displays for enriching place-based communities. After discussing related work, we give a brief overview of McLuhan's media theory and the interplay between figure and ground and the "rear-view mirror" analogy. We then describe the ground of networked public displays, i.e., public space, and show what effects networked public displays can amplify. At the same time we also make what McLuhan calls an "inventory of effects" of the figure by giving examples of existing networked public display applications that support identified effects. Next, we present the "rear-view" mirror of the ground/public space and show some of the processes in public spaces that lead to identified effects. Finally, we present concluding remarks showing that community is the message of the networked public displays medium.

2. RELATED WORK

Previous work has explored how we can fit networked public displays with the rest of widespread media such as Facebook, Twitter etc., [22], and how we can build on the properties of public spaces and human needs in them, i.e., the need for passive engagement by observing what others are doing, the need for active engagement by talking to others, and the need of discovery of a place and its new features [20]. Prior work has also looked into situated aspects of single public displays and how we can

design public displays that stimulate social interaction according to Goffman [15]. Our focus here falls closest to Ebsen's work, which connected McLuhan and media architecture, and discussed how a screen can be seen as material for artistic expression [7]. Similarly, McQuire [18] examined the connection between media façades and the city, and how they connect a mediated space between the virtual and the real and impact the actor and spectator role of people in public spaces. More recently and more broadly Foth et al. [8] speculated on new opportunities for pervasive displays and how they would impact our interactions in general. We complement Ebsen's and McQuire's work by contextualizing McLuhan's theory through the reference to communities. We go beyond their notion of a public display as an installation/material situated in a single space, and look at public displays operating across public spaces, creating an intertwined connection between the space and the communities that inhabit it. On the other hand, we have a more focused research question than Foth et al.'s as we focus on networked displays in public/urban spaces.

3. CONNECINTG MCLUHAN, PUBLIC SPACE, AND NETWORKED DISPLAYS

One of the most influential mass media theories that looks into the long-term and societal impacts of media is the one of McLuhan [16] that states "the medium is the message". According to him every medium is an "extension of ourselves" and has a message regardless of its content by impacting the way we interact with each other. In his work he is covering a wide notion of media from, e.g., contentless light bulb that stimulates social interactions by creating spaces that otherwise would not exist in the dark, to radio, TV, and the Internet that stimulated connections within and across space/time creating the notion of "the global village" where people receive news from their locality and distant places equally.

The key to understanding how a medium impacts society lies in understanding the interplay between the "figure", i.e., the medium, and the "ground", i.e., the context in which a medium is used [17]. According to McLuhan, the figure amplifies the invisible and sometimes intangible effects of the ground: "The figure is what appears and the ground is always subliminal. Changes occur in the ground before they occur in the figure. We can project both figure and ground as images of the future using the ground as subplot of subliminal patterns and pressures and effects which actually come before the more or less final figures to which we normally direct our interest." [23] One of his examples of the interplay between the figure and the ground is how the car (as figure) impacted the ground (as ground) and led to creation of suburbs, and connections between the people in suburbs and cities - these are also the messages of the car as a medium. By examining the effects of the ground - public space - on the audience we infer effects that are amplified through the figure - networked public displays - thus putting McLuhan's theory into work. This is in contrast to most of the current examination and understanding of the role of this new medium, which has been mainly focused on the figure, i.e., the screen [6, 8, 28]. In our analysis of the effects of public space we draw from the works that analyzed public spaces in the US [3], UK [4, 12], and internationally [34]. We also go along McLuhan's study of the media by making an "inventory of effects" of the medium/figure and show examples of existing networked public display applications that back up our view.

Our research is using another tool from McLuhan's work: looking through the "rear-view mirror" [16]. The rear-view mirror metaphor states that a medium becomes fully visible only when a new medium has overtaken it. For example, the telephone overtook the telegraph and was first thought of as the "talking telegraph"; or the car that was first thought of as a "horseless carriage". Although the rear-view mirror has usually negative association and its use is seen as "march[ing] backwards into the future" this happens when the role of a new figure is understood through the previous figure - this is how public displays are seen and designed now as *digital signage* that shows similar content as analog signage or poster boards, just in the form of videos and slide shows -- that have little or no connection with the ground/context. However, *we look at the ground through the rear-view mirror* in order to understand some of the causes of people's connections with public spaces and uncover some of the basic principles that we could build this medium upon.

3.1 Figure and Ground

In our analysis of public spaces and the role they have in our lives we uncovered four effects that make them "extensions of ourselves" leading to interactions that go beyond an individual, namely: connecting local communities, promoting community diversity, connecting geographically distributed communities, and enriching local life by connecting it with diverse communities.

Connecting Local Communities Carr et al. [3] explain how public spaces are the building blocks of local communities as they provide the place where local neighbors bump into each other to socialize and share the latest news, help with a heavy grocery bag, or just 'hang out'. These activities, in turn, help in creating the common identity: "When public spaces are successful […] they will increase opportunities to participate in communal activity. […] In the parks, plazas, markets, waterfronts, and natural areas of our cities, people from different cultural groups can come together in a supportive context of mutual enjoyment. As these experiences are repeated, public spaces become vessels to carry positive communal meanings". Today's highly mobile lifestyles make this harder and harder. As explained by Carmona et al. [4] communities of place are still an important part of our lives, but are being replaced by distributed communities of interests: "In a highly mobile age, it is argued that people no longer want or need the previous sense of community and neighbourliness: they can now choose from the entire city (and beyond) for jobs, recreation, friends, shops, entertainment, etc. - and in the process form communities of choice. The issue, though, is not one of an either/or choice between mobility with spatially diffuse contact networks or spatially proximate contact networks. Instead, it is one of providing opportunities for both, and allowing people to find their own balance." In other words, local communities and neighborhoods are equally important as spatially distributed communities of interest that are conveniently one-click away, but are unable to help out sometimes with simple problems, e.g., a tablespoon of sugar when in need [2].

Due their embedded nature networked public displays can promote local connections and interactions within place-based communities. This area of research has received a lot of attention and researchers have stimulated interaction between members of place-based communities by stimulating social interaction through obscure place-based information [20], classifieds and item exchange [1], community's memory and history through photos posted to a display [32], or civic engagement by voting on a locally relevant topic [31]. With a display network a wider area relevant for the community would be covered, e.g., from the local post office to a coffee shop where the local life unfolds as in [32].

Promoting Community Diversity As public spaces are occupied with more than a single community Holland et al. [12] argue that

they should promote the 'provision of difference', i.e., they should be able to cater to the needs of different groups successfully and in a concurrent way, and should not be promoting just social homogeneity. They furthermore state that "being able to be seen in public and to be able to see different types of social groups may go some way to enabling everyone, and children and young people in particular, to observe difference, and thereby perhaps, promote tolerance for social diversity." However, sometimes certain groups do not mix well together, e.g., elderly and teenagers [3, 12], which even results with teenagers moving out from public spaces to "grey" or "slack" areas such as remote hallways or walkways [9]. Carmona et al. point out the benefits of mixed communities in neighborhoods in creating "balanced communities" and state that community diversity provides better opportunities for "lifetime" communities where families and individuals live better within a neighborhood. Thompson [34] explains the need for connecting locally different and diverse communities "Although information technology does allow for a greater flexibility in terms of location, particularly for some office functions, it is also resulting in new urban concentrations for face-to-face activity. People need human contact and the city is the place for that, even if technology allows us to do otherwise if we choose. [...] We are thus looking to an urban society where, perhaps, more people are living in relative proximity than ever before, but where the regular daily social contact that comes from sharing homes or living in culturally homogenous districts no longer pertains. It is an intriguing prospect – a close-knit society of strangers."

Networked public displays could promote awareness of community diversity, may it be age difference, cultural, ethnic, or any other. For example, "Pins" [13] explicitly supported expression of different community membership by allowing football fans to show a football club's emblem. Through a display network different communities would get a chance to express their membership in more places/displays thus getting more visibility, e.g., at a University, cafes, public library, or schools as in [13].

Stimulating Greater Connections Within Geographically Distributed Communities Public spaces have the power to connect people across time and distances and stimulate connections that exist in larger society [3]. Such connection "involves an understanding of the meaning of places beyond the superficial level" [3]. Some of these connections are developed due historical events that were carried out at a particular place. In their analysis of public spaces in the US Carr et al. point out several examples, amongst one of them is the example of the Boston Common that captured a tremendous amount of the US nation's history, ranging from being a British camp in the American Revolutionary War in the 18th century to protests in the 20th century against the war in Vietnam. Although not many people can recall all the events that occurred in that space, the space itself emits a beacon of greater historical connections within the people of Boston and the American nation. However, as we reallocate more often our connections with local roots tend to get weaker [12]. Although media such as online social networks offer benefits of long distance connections and increased social capital, recent research pointed out some of the drawbacks in its use as its nature of use is shifting towards self-promotion [29].

Networked public displays can offer aid here by capturing local history and emitting beacons of greater connections within geographically distributed communities, thus connecting them over distance and time. For example, CLIO [30] allowed people to upload stories of historical and local relevance for a place in the city of Oulu or Corfu (2 deployments) in the form of text, pictures,

and videos that were shared across a display network. Another example is the Moment Machine [19] that allows passers-by to take photos and share them across the network, thus collecting and creating stories and memories within and across public spaces.

Enriching Local Life Public spaces offer glimpses of connections of our locality with other distant places, e.g., seeing Chinese restaurant can spark and intrigue imagination/day dreaming about a faraway location (unless you are in China), or even broader to faraway galaxies, e.g., standing or looking at Stonehenge can portray our connection with the universe [3]. When it comes to the audience in question, i.e., communities in public spaces, these connections could be stimulated by connecting otherwise distant places and areas. These places do not have to be so far away, but rather diverse from the local. In some cases this could bring up similarities within culturally different communities [24]. In other, e.g., in distant or rural villages, distance from the rest of the world can have negative effects [10], and amongst others, on social interactions in them as public spaces and public life can become too homogenous/concentrated only on the local [3]. Sometimes this sense of isolation is due low diversity in social life of a place and as a result more and more teenagers leave these places once they obtain the legal age (other reasons also influence this decision, e.g., finding a better job or moving to university).

As a communication medium networked public displays could enrich local life by connecting it with (more) diverse places and communities. In this area researchers have mainly used real-time video connection to create connection between distant places, e.g., Hole in Space [11] connected New York and Los Angeles through a video link. Similarly, Screens in the Wild project used a real time video connection in variety of applications [27].

3.2 The Rear-View Mirror of Public Space
In order to stimulate engagement networked public displays can also here leverage on extending and building upon the ground of public space and the way people create connections to it and participate in it. To put it in Carr et al.'s words "Meaningful spaces are those that allow people to make strong connections between the place, their personal lives, and the larger world [...] By the build up of overlapping memories of individual and shared experiences, a place becomes sacred to a community [...] The freedom to leave a personal mark on a site, one that can rest within marks of history is one kind of valued modification. [...] The development of meaning is an interactive process between the space and person that evolves over time, a transactional process in which user and setting are both impacted. [...] Repeated direct experience is a requirement for connections to develop." In other words, good spaces are those that go beyond the local and convey connections to "the larger world", allow people to engage in them and create "overlapping memories of individual and shared experiences" or allow them to "leave their mark". This in turn supports the creation of a meaning through "an interactive process between the space and the person" impacting the surrounding, and sometimes greater, community and person's sense of belonging.

There are four important concepts from Carr et al.'s work that describe engagement in public spaces that can be extended through networked public displays. The first involves creating individual or shared experiences through engagement with a public space. If we transfer this to networked public displays this would mean stimulating passers-by individual and shared/group engagement with a display and each other. This can be demonstrated through existing work, for example, through using simple games that allow passers-by to use their whole body [25] or

by stimulating social interaction between them [20]. The second concept involves leaving a personal mark in the setting. For example, this can be as simple as allowing passers-by to express their opinion about the content/topic relevant for the local community using "likes" [21] or contributing to the local history by taking a photo through a display and leaving it on the network [19] or by posting a comment on a locally relevant topic [31]. The third concept involves providing (greater) connections with the (larger) world. Examples of existing work have done this through connecting information from the locality with information from outside of it [21] or through other means like video connections [11, 27]. The fourth, and maybe the most important concept, involves "repeated direct experience" as a requirement for the connections to develop. In other words, in order to stimulate connections through networked public displays passers-by need to have the ability to engage repeatedly over a longer period of time: this is important as it shows the necessity of longer deployments. The above examples show how engagement with the medium can take various forms. Engagement within the local context, e.g., situated engagement with a display and "leaving a mark", may also stimulate the creation of awareness of community diversity, as anyone passing-by can be seen interacting with a display and could leave a mark. This would also allow recording of local history that can be shared across the medium and transmitted to different places, thus moving and signaling connections within a greater community, or infusing diversity into a different one.

4. CONCLUSION

In the core of McLuhan's media theory is that every medium/figure operates within its context/ground amplifying its effects [23]. The above-mentioned effects in public spaces are community oriented and aim at connecting people within and across public spaces. Therefore, the medium "networked public displays" (the figure) within public space (the ground) is a natural/organic fit for stimulating and supporting theses effects, making *"the community"* the message of this medium: Even simply showing community relevant content on a display creates more engagement than showing advertisement [26]. By using the rear-view mirror and examining processes that lead to these effects we contemplate how we can move networked public displays into fulfilling their potential as a communication medium. With our work *we show why this new medium is suited to address and enhance place-based communities*. Also, we hope to start a discussion within the media architecture community, as our view of the medium is very specific and tied to a particular theory.

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