Openlight: A Concept of Urban Lighting to Make Urbanites Aware of Each Other

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Abstract

Though there are many examples of attempts to create interactive lighting installations in urban public space, its meaning for urbanites has not been fully explored and defined. What could interactive lighting contribute to urban public space? Using the concept of Third Place, this research focuses on the social potential of urban public space using the concepts of, especially the role of space in connecting people and fostering social capital. Our hypothesis is that interactive urban lighting can assist this role of urban public space. Openlight is a concept of networked interactive lighting that provides urbanites with open access to penetrate psychological barriers between individuals and groups in urban public space. Hence the interaction would provide more possibilities for urbanites becoming more aware of and getting to know each other. For this first attempt, we have created a scaled prototype for a Café/Restaurant setting.

Author Keywords

Lighting; design; public space; community; internet of things

ACM Classification Keywords

H.5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous.

Introduction

The more urban public space becomes convenient and visually beautiful, the more a dilemma surfaces. It certainly loses its power to foster community and unexpected encounters [2,7]. As Oldenburg suggests with the term Third Place [3], urban public spaces such as the café are where urbanites get to know each other. However in reality, in a café, we normally do not know whom the other customers are or what they are going to drink. Indeed, we may have no interest in them.

We call such a state of space, in which people in a space are not aware of each other and keep distance, as an urban space where without care for others. Life in such urban public space lacks a feeling of safety and actually lacks social safety [4]. When something happens in such a state of space, we have to start cooperating with others we do not know. How can we change the state of such space to an urban space in which we are aware of each other like familiar strangers [5]? This is the aim of this research. As we explain later, we address the aim using networked urban lighting and its interaction design, pioneered in CHI research [6].

Concept

When we start to look at methods for connecting people living in urban public space, we shall consider social network services such as Facebook, which urbanites access from urban public space nowadays. However the relationship between urban space and such services remains weak. Human connection and relationships in urban space, on the one hand, and through mobile network services, on the other, are not properly combined. and the whole experience is not designed in harmony. "If someone is talking on a phone, sending a text message, checking their mobile map, or uploading a Wikipedia article, they may forget to smile at a passer-by or properly thank the street vendor from whom they purchased a pretzel"[1]. Therefore, mobile devices and their application software are not helping to make the current state of urban public space more communicative.

Conversely, Openlight commits to creating connections and relationships between urbanites in the same urban public space in a physical sense. The material that Openight uses is rather stationed. This case looks at networked urban lighting and its capability to interact with urbanites [6].

Why provide access to public urban lighting?
We have had almost no interaction with urban lighting except to simply receive its light. Since it has been at the background of our perception, the light is public and belongs to everyone, but same time to no one. On the other hand, when we look at other common resources such as park benches, we find more diverse levels of access to them. Since there is limited number of seats, it is inevitable that when someone sits on them, they limit the opportunity for others to do so. Therefore we have manners and communication norms over the use of public bench. Back to urban lighting, since there are no forms of personal occupation, there are also no manners or communication between its users. Openlight intends to couple urbanites' access to urban lighting with manners and interactions otherwise closed in infrastructure design. We expect urbanites to find each other through the process if its use. Therefore, Openlight is accessible and capable of temporary occupation – in other words, its primary form of

openness is between urbanites and urban lighting system.

How can urban lighting connect urbanites?
Openlight's second form of openness is found in the design of lighting to spread beyond the personal sphere. Traditionally, the principle of urban space design focuses on dividing space efficiently based on functions. For example, in café, a set of table and seats provides place and a boundary of space which one can occupy for a while. If we were to light up the space using such a traditional way of thinking, we would light up those individual spaces one by one. However this may not encourage communication and awareness among urbanites in a same space.

When we actually observe a café, we see some chances for contact between customers by chance. We see this as an opportunity to create the second Openlight concept of openness. To create such chances by intention through accessible lighting, we design lighting spread over groups of customers along with the rituals and customs of the place, and let them access and participate into the scene. This is the concept of Openlight. We introduce two scenarios for our first prototype.

Scenario

We have created a 1:5 scaled prototype system along with the Openlight concept targeting cafe or restaurant including 2 scenarios.
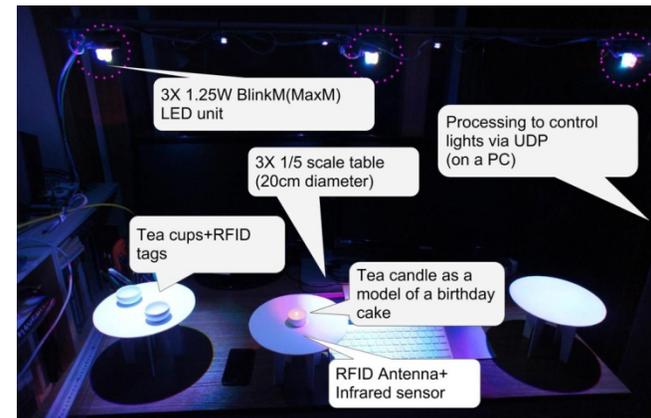

Figure 1. Scaled prototype and its setting

Birthday
Occasionally we come across someone's birthday party at a café or restaurant, or we do so with close friends among other customers. A typical custom is: when candles of the birthday cake are lit, those in attendance are expected to join in singing the birthday song. This scenario goes along with custom, emphasizes participation and impresses the birthday person with lighting.

- A birthday cake with candles is ready to go.

- When the candles are lit, an IR sensor embedded in the dish of birthday cake detects the light of the candles. The table is then lit in dimmed blue to make the orange candle light stand out. The light spreads beyond the table. Spreading orange lights creates the illusion that there is a huge candlelight. Brightness syncs with waves and flickers of the candlelight

Figure2: (left) Dim blue makes orange candlelight stand out.

(right) Spreading orange lights creates the illusion that there is a huge candlelight. Brightness syncs with waves and flickers of the candlelight.

▪   When the candle is blown out, the other tables go dark for a moment. When the ceremony is over, the light goes back to normal.

Cheers! / Toast! / Kanpai!
Gathering at a café/restaurant and drinking together is essentially a social activity. Moment of Toast! symbolizes this. This scenario starts from accentuating the moment of drinking a drink with an appropriate color of light. In its second phase, when the Toast! occurs, the color spreads beyond the table of the group with the aim of triggering a connection with others.

▪   Imagine two or more of us get together and order tea since it feels a bit cold. Openlight will accommodate them with warm lighting when the tea is being sipped; when we actually feel the warmth of tea on our hands, tongue, and nose.

▪   Moreover, when the Toast! moment occurs, the warm color spreads over tables (by detecting all the cups are suddenly lifted) in order to spread and share the cheerful moment with others. Hence it grasps others' attention for a moment.

Figure3: Openlight accommodates its users by warm lighting when the tea is being sipped.

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