Chapter 76
Assembly, Space, and Things: Urban Food Genome, Urban Interaction, and Bike Share

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ABSTRACT

Each day as one notices more people walking along sidewalks, head down peering into smart phones, the fear is that social interaction in public space is dead. However, the integration of human and non-human processes may connect our communities now in more ways than ever before. New urban design theory suggests that "the city" may not be understood as a whole, rather as an assembly of dynamic urban processes. At many bike share systems around the world only static maps with limited interaction experience. Urban interaction design and the Internet of Things, is changing this experience. The interdisciplinary methodology describes a symbiosis of people, space and things. The significance is the integrated urban interaction design process of: urban design theory using classification of urban experience; geospatial analysis at the street-scale of point addresses, and fabrication of a test-bed kiosk to test ambient sensors and user interaction. Connectivity experienced in the virtual space of social media may now enter back into the physical realm of public space.

INTRODUCTION

At a time when people are seen walking on city sidewalks intermittent with their heads down looking at smartphones, one might think that social interaction and community connectivity in public space are dead. However, the integration of human and non-human processes may enrich the social experience of urban space now more than ever. New food options and temporary street festivals are randomly found walking or driving. But this is uncommon. It is far more common to find distinctive new food options from entrepreneurs at restaurants using Yelp or mobile food trucks using Twitter. Through new

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collaborative understandings of urban life as an assembly of processes, open geospatial information systems and interactive design technology, is the emergence of urban interaction. People may now be connected in the city through nuanced details of their personalized interest. Specifically, the opportunity exists to transform the current limited third-generation bike-share station kiosks into interactive street portals through personalized user decisions. The introduction of crowdsourcing applications such as Yelp, Twitter, Pandora and Facebook allow people in cities to connect through decisions of their urban experience. With bike share systems in 700 cities in fifty countries worldwide, nearly doubling in the last three years (Urban Planning, 2015), research into new interactive bike share kiosks may show how urban assembly, space and things meet.

Urban interaction design, as described in the interdisciplinary work outlined here, requires an assembly of knowledge greater than a collection of the three individual research parts of urban design theory, geospatial information systems and kiosk interaction design. The broad complexity of the overall investigation confronted the deeply focused work within each expertise. At times any isolated area might push far away from the broader intended purpose to create an integrated urban interaction experience for urban dwellers, or from the expertise of other members of the design team. Yet the iterative workflows (Woodbury, 2010) and the movement of team members from their own expertise to the support of other's expertise helped inform and educate each member and thusly stitch together an overall design process. The integrated research described here falls within a broader scope of current 'urban computing' researcher (Carlo Ratti MIT Senseable Cities Lab - Copenhagen Wheel, 2011) (Frog Design NYC Kiosk, 2013) (Oliver Obrien, CASA Barlett Real-Time Bike Share Website, 2010) who face similar challenges. The urban theory and bike share kiosk system work described here intends to contribute to understand how urban interaction design collaboration operates, its challenges and opportunities. This work is also intended to contribute to the specific investigation of how an Internet of Things may be used to go beyond bike share route planning and to deeply enhance bottom-up and resilient, sustainable community connectivity in the urban processes of today of human and non-human interaction that is only now beginning to be understood.

The first part of the work conceptualized a theoretical comprehensive taxonomy of urban experience called the Urban Genome. For the purposes of this phase of the research a subset of food or dining experience was then chosen to collect data and will be referred to as the Food Genome. Various dining experience qualities were chosen and ten measurable indicators were used for analysis and visualization in a parametric geospatial information system, GIS. Over fifty businesses were visited in-person to measure the quality, cost and operating hours of food establishments in the study area of downtown Eugene, Oregon. A major part of this chapter will focus on how these qualities of food experience might be used to organize how people of similar user profiles would be informed via five bike stations in downtown Eugene. The last part of this chapter will describe ongoing research about the interactive experience at the physical 'thing' of the kiosk including ambient sensors, differences of public and private interaction, and testing of implicit and explicit interaction. The parallel urban theory, GIS and interaction design research of the team allowed a cross-informed workflow between work efforts.