ABSTRACT

INFORMATION, COMMUNICATION AND WAYFINDING:

TECHNOLOGY SHOWS US THE WORLD

By

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With emerging technology, the relationship between individuals and the environment has changed dramatically. We live in a world awash in an ocean of information and electronic devices like smart phones have become intermediaries that help us to understand our surroundings in new ways.

This is the subject of my thesis exploration. I examined this subject using smart phone technology and also emerging technologies such as electronic paper. I explored the use of these technologies in a number of settings, city streets, a hospital, museums and on trains. My projects include an interactive installation, an iPhone application, an e-paper patient card, an interactive museum guidebook and a window display for trains.

I will keep exploring the applications of new technologies and constructing more bridges between the real and the virtual world.

INFORMATION, COMMUNICATION AND WAYFINDING:

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A PROJECT REPORT

Presented to the Department of Art

California State University, Long Beach

In Partial Fulfillment

of the Requirements for the Degree

Master of Fine Arts in Art

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LIST OF WORKS

WORK

1. *Step Into LA*, interactive installation, 10 feet by 10 feet by ten feet.

2. *Look Into LA*, iPhone application and interactive installation, 3 feet by 10 feet by 10 feet.

3. *Hospital Cards*, video and printed-paper samples, 4.2 inches by 2.3 inches.

4. *Museum E-paper Guidebook*, video and printed-paper samples, 5 inches by 8 inches.

5. *Amtrak Window Display*, video, 2 feet by 3 feet.

A CD of these works may be obtained at the Special Collections Department of the Library at California State University, Long Beach.

INFORMATION, COMMUNICATION AND WAYFINDING: TECHNOLOGY SHOWS US THE WORLD

With emerging technologies, the relationship between individuals and the environment has changed dramatically. We live in a world awash in an ocean of information and electronic devices. Smart phones have become intermediaries that help us to understand our surroundings in new ways. We can use these devices to help us find our way around the city or large and confusing buildings. We can also use them to access deeper more specific information about our environment.

This is the subject of my thesis exploration. I examined this subject using smart phone technology and also emerging technologies such as electronic paper. I explored the use of electronic technology in a number of settings, city streets, a hospital, museums and on trains.

The city of Los Angeles was the first environment that I examined. I am from China and I see things differently than native Angelinos. It all started one day as I was walking in downtown Los Angeles. I realized I was in a film location from the movie *500 Days of Summer*. The surroundings were so familiar as if I suddenly walked into the film. "There are so many beautiful things happening here," said Tom, the character from the movie, "I just want people to notice more."

Film culture is synonymous with our everyday life. The visual elements of films become part of our collective memories. The street you walk past everyday, the street where a famous scene was filmed, connects you physically with that film. One may experience a sense of comfort or a sense of foreboding in a particular locale based on its

familiarity as a film location. For example, when I was at Angels Knoll Park in downtown Los Angeles, I suddenly felt I walked into *500 Days of Summer* because I was so familiar with that scene.

Combining video and interactive technology, my first project is an installation that allows the audience situated in a gallery to travel to downtown Los Angeles where collective and individual memories collide. In this interactive installation, I placed five markers on the floor representing five locations from downtown Los Angeles. There was a monitor on the wall. When a viewer stepped on a marker, the monitors showed movie clips filmed in that location, and shots of my personal experience at that location.

Smart phones, as a personal electronic device, also provided great possibilities to explore Los Angeles as a film set. With Internet Operating System (IOS), Global Positioning System (GPS), Software Development Kit (SDK) and Augmented Reality (AR) technology, I designed an iPhone application called *Look into LA.*

In this application, I collected clips from twenty movies that are shot in downtown Los Angeles. Users can go to the movie locations and visit movie characters who are generated with AR through their iPhones. They can also use a photo filter to make movie posters from photos they shot in these locations. Additionally, they can comment about this location and share these experiences with their friends through social media like Facebook and Twitter. The AR markers become a signage system for this invisible movie world in the city.

As I was exploring the emerging technology for smart phones, I became interested in electronic paper. Electronic paper (e-paper) is a display technology designed to mimic the appearance of ordinary ink on paper. Unlike conventional backlit flat panel displays which emit light, e-paper relies on reflected light like ordinary paper. This technology can hold static text and images indefinitely without using electricity, while also allowing images to be changed at any time.

Flexible e-paper uses plastic substrates and plastic electronics for the display backplane.[1] I wanted to explore how this substance could be used as a device to help people navigate complex environments of both a physical and informational nature.

Hospitals as public spaces contain a great deal of information. To present clearer information, I designed an application with an e-paper card that can be programmed for various groups of people that are in the hospital.

First I designed a way-finding system that would be beneficial for many user groups such as doctors, patients, staff and guests. Then I researched what information would be useful and appropriate for each group and designed a wireframe for the architecture of each user group's card. After constructing the information architecture, I developed each card more fully to show how the card works, how information can be accessed as well as the overall look of the project. For example, patients can use this device to help with tasks such as: taking drugs on schedule, information on side effects, providing insurance information, and making follow-up appointments. Because their behavior can directly affect their health, this card can help patients take better care of themselves.

Continuing my exploration into applications of e-paper, I examine the information environment of the museum. The main aspect of this environment is education, which requires effective communication. Traditional museums already use educational devices such as guidebooks, artist's statements, and audio tours. These are all quite useful. However, they often seem impersonal and lack a connection between the audience and the information.

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[1] Heikenfeld, Jason, Paul Drzaic, Jong-Souk Yeo, and Tim Koch. "Review Paper: A Critical Review of the Present and Future Prospects for Electronic Paper." *Journal of the Society for Information Display* 19, no. 2 (2011): 129. doi: 10.1889/JSID 19.2.129

To solve this problem, I designed an interactive electronic guidebook. It was important to me that this device be versatile and therefore useful for most museum shows. I wanted to improve the communication between the viewer and the art. These guidebooks provide options for viewers to choose the kind of information they are interested in. By enabling individuals to select what information they consume, the users become active participants in the process instead of passive observers.

There were two shows I utilized as examples of this application. One is *Art In The Street* shown at the Museum of Contemporary Art; the other is *The Portraits Collection* at the J. Paul Getty Museum. My electronic guidebook combines all the properties of traditional museum devices into one device. It is also interactive in many ways. For example, users can make notes when the artwork inspires them. They can also share their inspiration with their friends through social media. This kind of interactivity builds a connection between the viewer and the artwork, thereby improving the educational experience.

Working on my museum project got me thinking about the act of viewing in general. This led me to memories of gazing out of train windows while traveling in China. Looking at the world from a train is interesting because instead of being able to directly interact with the world one sees, one can only passively observe it. In this way, the window becomes a medium that connect passengers to the environment they are traveling through.

To heighten this experience, I designed a window display for Amtrak. It provides information about what one sees through the window and also displays a tracking map. Amtrack's Pacific Surfliner is the route for which I developed a display. This route runs along the Southern California coast between San Luis Obispo and San Diego. My display allows the viewer to learn about the history of the area, train technology and the history of train travel in the West. It also provides information on native flora and fauna,

highlights places of interest along the route, and provides a reading of the outside temperature.

New technologies provide us with opportunities to connect with our environment and our world in new ways. I will keep exploring these new opportunities and constructing more bridges between the real and the virtual world.