

(Re)Creating Lively Cities through Ambient Technologies: Arts, Culture, and Gastronomic Experiences

Abstract. Our paper discusses different processes for animating urban spaces and creating lively cities through arts, culture, and gastronomic experiences. Such processes include interactive human scale environments, or ambient environments. These environments are sensitive and responsive to the presence of people, conveying a much more dynamic feel of a street, a plaza, a neighbourhood, or a city.

Our world is a world of signs, images, colours, symbols, and interactivity. Humans demand much more human interaction and new modes of connection with the urban space through technology and innovative design tools. Neuro-marketing, defined as an emerging area of marketing studies consumers' sensorimotor, cognitive, and affective reaction to any marketing stimulation., These aspects are present in all aspects of life including urban spaces that need to be more exciting and easily accessible and walkable. Arts, culture, and gastronomy are elements that are always present in every urban space, on different scales, thus providing us with a balanced environment. Ambient technology has the power to transmit the message of culture socially and politically by enhancing human interaction, community and cultural awareness, knowledge, creative and active consumption, progressing sustainability (spiritual and material), and access to modern technologies in urban spaces. Cities and urban spaces need to be more progressive to set place making as a concept at the heart of every lively city's design. A sense of place, conviviality, and safety can be generated through interactive design, and technologically animated spaces. The digital era is extensively impacting our urban spaces, which need to be flexible and adaptable to meet the attention and aspirations of the users.

Keywords: ambient technologies, interactivity, arts, culture, gastronomy.

1- Introduction: Place making – designing spaces for more interaction



In Australia, New Zealand, and the United States, the concept of place making has been pushed forward by city planners in order to provide citizens with more adequate urban spaces for interaction, enjoyment, and education. Governments are associated with communities to develop creative and lively atmospheres that respond to people needs, desires, and future aspirations. In May 2013, the city of Sydney organized the 2013 Media Façade Exhibition and competition, along with Vivid Sydney and the International Symposium of Electronic Art (ISEA). Biennales, symposium, and conferences help support innovation and progress the concept of interactivity in cities.

Figure 1: Media Façade Exhibition 2013, Sydney, Australia

Ambient technologies will be "capable of meeting needs", anticipating and responding intelligently to spoken or gestured wishes and desires without conscious mediation, and even these could result in systems that are capable of engaging in an "intelligent dialogue" (Punie 2003, p.5). Interactivity includes the lighting of public spaces, and Media architecture that includes text, graphics, and images within the architecture of the buildings. Place making is about rethinking public spaces and cities while taking into consideration the citizens as the main actors while designing cities for people. Users and occupants are placed at the heart of the reflection on urban spaces, where spatial designs emphasize creating dynamic atmospheres, enabling people to interact and to be part of the cultural diversity of an urban space or city.

2- Ambient technologies as tools for dynamic cities

Ambient technologies are the intelligent objects that will make our lives easier, much more relaxed and enjoyable (Philips Research, 2003). Designers and scientists explore together a new vision for a future city, where smart objects are integrated into different objects: doors, furniture, walls, cars, roads, clothes, and even food (Crutzen, 2006).

Cities are a reflection of diverse networks of interaction, representing different people and social categories from diverse backgrounds and various walks of life. Many cities are planned suddenly, and are growing under increasing pressure through urbanization. As the spaces we live in are dynamic, with emerging new applications, architects and designers being called to transform public space, and make it more interactive by transforming the urban fabric into a dynamic tool. People of the city are in need today to renew their relationships and connection with the urban life, the street, and cultural life. Ambient technologies include interactive environments that use sensor technology which responds to the presence of people. The ambient intelligence paradigm builds upon pervasive computing, ubiquitous computing, profiling practices, context awareness, and human-centric computer interaction design (Zelkha & Epstein 1998; Aarts, Harwig & Schuurmans 2001). Today, there is an urging need to think outside the box, and embed urban plazas with dynamic contexts, to convey a feeling of digital change within the city; City dwellers are provided with a real platform to establish an interface to create customized environments for people. Disabled people are very important actors, where ambient technologies can be used through touch, view, smell, and hearing, to lead the handicapped people through the space. Interactive design has inspired designers from the Design Research Lab to design for the blind and the deaf.



Figure 2: Call my attention, Design Lab Berlin

“Call My Attention” is an application for immediate Line-of-Sight Signaling on Mobile Phones. The application enables ‘buzzing’ of nearby friends to alert them. It is especially helpful for deaf users, but also in crowded environments (Design Lab, 2011). Technology is all around us, so why not using it to help the disabled find their way through our complex world.

3- Dynamic cities – Arts, culture, and gastronomy

When we think of culturally dynamic cities, we typically refer to arts, culture, and food that are part of actors to animate a city, and make it more usable.



Figure 3: Integrated design commission, SA bog, Adelaide

In the city of Adelaide, in South Australia, a new project called 5000+ is taking place, by adding dynamism to the urban environment. 5000+ is a design-led project for the redesign, renewal and reactivation of inner Adelaide. “It works to connect the three levels of government and it reaches out to business, the public, academics and researchers to build a vision for Inner Adelaide using design as its medium,” said Mr Horton, the commissioner for integrated design in Adelaide. Since June 2011, the team has been collecting and enabling ideas and propositions from design professionals, businesses, not for profit organisations, government agencies and academia.

Immersive realities environments are potential tools that can restructure the arts and the cultural life of a city, as part of a temporary exhibition. The public space is perceived as a cultural mirror, reflecting the variety of cultural values within the community, ranging from language to religion. This is a very diverse field where different techniques can be used including: sensors, artificial intelligence, and similar environments that would call for the use of acute technologies.

The Guardian newspaper started a project called Guardian Goggles, published on April 1st, 2013, which incorporates translucent screens in the lenses, overlaying the wearer's view of their surroundings with a real-time stream of specially curated opinions from the paper's reporters, critics and commentators.

Arts, culture, and especially food are the key for a successful dynamic city; therefore it is always very beneficial to create immersive environments where visitors learn about the history, virtually attend events that will take place in the next season, and also a digital interface that would present the life of gastronomic traditions.



Figure 4: Aspirations for a Liveable city, Adelaide, Australia

4- The American Experience

New York City is known as a melting pot of cultures and civilizations. Food is an integrative part of this diverse culture that is a mix of Cubans, Puerto Ricans, African Americans, Europeans, Indians, Pakistanis, Arabs, and Asians. New York is a city of immigrants that bring their own distinctive customs, religions, and food traditions. The uniqueness of New York consists of several diverse neighborhoods with different culinary traditions including Harlem, Spanish Harlem, Korea Town, Little India, East Village, Little Italy, and Chinatown. This ultra-urban destination is full of urban opportunities, thus conveying a unique gastronomic and cultural experience. How about an international village with sensors of diverse scents from different countries? How about an interactive Media Façade with sensors reacting to people’s countries preferences with perfumes of Japanese food, Indian food, and Mediterranean food. The gastronomic experience is still not approached as well as it should be when it comes to interactive technologies, thus there is a need to organize workshops and installations in this direction. Media technologies and ambient technologies can be integrated in a way to provide the visitors with a unique experience of smells and sounds.



Figure 5: Gastronomic diversity, New York

5- The Australian Experience

Enhancing the urban environment with use of innovative forms of new technology, large-scale light projections, installations and music is festival that happens annually in Sydney called Vivid. The Vivid festival is one such example that reflects the eagerness of the Sydney City Council and artists to embellish the city with light music and ideas. Vivid is known for its spectacular lights projected on to large-scale architectural sites littered around the city center during the festival. For instance, The Sydney Opera House is video mapped directly onto the 1,056,000 tiles. Another building that uses large scale architectural video mapping is Customs House. (CNN, Neubauer, 2013).



Figure 6: The Vivid Festival, Sydney, Australia, by CNN

During Vivid the entire city center, located in Circular Quay surrounded by Sydney harbor is ablaze with light projected onto buildings, light projected onto sculptures and LEDS's used in installation artworks. Such colorful ambient technologies provide inhabitants and visitors with progression towards a digital and creative urban future.



Figure 7: A Tunnel at the Rocks, Sydney Vivid, 2012

The event is also a gathering for lectures, workshops and debate in the fields of creative art, design, architecture, and fashion. Such a gathering certainly highlights the global image of Sydney as a center for creative arts and emerging technologies that embellish and activate the image of the urban fabric. "Vivid now leads the world in sheer number and size of buildings projections -- no other city lights up its famous landmarks and skyscrapers the way we do," says creative adviser Ignatius Jones, who co-directed the 2000 Sydney Olympics' opening ceremony.



Figure 8: The Vivid Festival, Sydney Opera House, Credits: CNN



Figure 9: The Vivid Festival, Sydney, CNN

One example of light sculpture is the media architecture project Euphonious Mobius (2013). Euphonious Mobius is a dynamic surface for infusing form and media. This work was designed by designer Rebekah Araullo. This artwork is interactive and through advanced computation and scripting techniques each block is unique in shape and size and functions as a singular pixel housing LED lights – leading to the creation of a media freeform. This freeform displays an emerging style in architecture. During construction, LED lights and sensors were embedded within the form to facilitate its interactive media component. Expressions are made through light and sound similar to a media façade where images are made on its form by the LED lights. Dynamic images are driven by input from motion and sound through the sensors. To add public value, this content was designed by a sound expert (Michael Bates) and a visual artist (OnacloV) to engage the audience and entice a multisensory interaction – sight, sound and touch.



Figure 10: Euphonious Mobius, Sydney Vivid Festival



Figure 11 : Euphonious Mobius, Sydney Vivid Festival

As a spatial intervention for Vivid Sydney 2013, Euphonious Mobius' interactivity and dynamic form create a multitude of interface experiences and facilitates dialogue in the form of contemporary media. Euphonious Mobius displays advanced applications and design that inspire the imagination in the field of architecture, media, design and lighting and echo and promote Vivid. The artwork was multidisciplinary collaboration that will brought together experts in the fields of architectural design, engineering, emergent technologies, acoustics and the arts. This project is an example of how cities can transform the fabric of urban spaces by creating vibrant atmospheres that enable people to interact and to be part of urban space and city.

6- New Zealand Interactive Experience

Place making is important to the social, cultural, and economic prosperity in New Zealand. It is an efficient model that engages both planners and the community to enhance the public space that respects people's needs and aspirations.

Luxcity is a transitional festival in Christchurch, New Zealand, where students of architecture from all over the country create "light" structures using lasers, beams, projectors, balloons, and fabric. Such design event animates the urban space and makes it livelier and more interactive, calling people from all walks of life and design levels to discuss sculptures, and to appropriate the urban space of their city. Creative-lead work also provides people with a feeling of hope and safety especially after the earthquakes that took place in the city. The 10-day festival includes workshops to build a new outdoor earth pizzeria on an empty city centre site, a guided architectural tour of the new AMI Stadium, lectures and outdoor screenings. (Stuff Online Newspaper, 2012).



Figure 12: Luxcity, the opening event in the Festival of Transitional Architecture where architecture and design students display their creations for one night, by Dean Kozanic

7- Creative cities – Public policies: Fostering distinctiveness

The post-modern humans thrive for new technologies, and digital media that enhance the navigation inside the urban and physical space, and create a feeling of safety and belonging to people from different ethnic groups in a multicultural city such as Sydney, New York, or Auckland. Our minds are highly impacted by the effect of emerging digital technologies such as laser beams, projectors, 3D cameras, and installations. Such elements are more likely to create a connection between humans and the technology inside urban spaces. These rich and interactive interfaces push the boundaries of art, culture, and creativity that cities like Sydney and New York have been pushing forward. An area of potential exploration would be the Arab world that is witnessing a great political revolution that was helped by social media. People took to the streets to demand dignity and basic rights; it would be rewarding if these same people become an integrative part of the design of their future cities, using interactive technologies to display their struggles and demands through creativity.

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