Chapter XXVII

WikiCity: Real-Time Location-Sensitive Tools for the City

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ABSTRACT

The real-time city is now real! The increasing deployment of sensors and handheld electronic devices in recent years allows for a new approach to the study and exploration of the built environment. The WikiCity project deals with the development of real-time, location-sensitive tools for the city and is concerned with the real-time mapping of city dynamics. This mapping, however, is not limited to representing the city, but also instantly becomes an instrument for city inhabitants to base their actions and decisions upon in a better informed manner, leading to an overall increased efficiency and sustainability in making use of the city environment. While our comprehensive research program considers a larger context, this chapter discusses the WikiCity Rome project, which was the first occasion for implementing some of WikiCity’s elements in a public interface—it was presented on a large screen in a public square in Rome.

INTRODUCTION

The WikiCity project at the senseable city laboratory at MIT is a multi-year research effort that builds on different research strings, combining under one common vision the aspects of sensing, time- and location-based data structuring, and the input and output articulation of this data within the context of urban environments. These different fields are combined both to offer new
perspectives in analyzing a city’s dynamic and for the conception and elaboration of novel tools for citizens to make optimal use of their environment (Calabrese, Kloeckl, and Ratti, 2007).

The WikiCity Rome project, on the occasion of La Notte Bianca (White Night, www.lanotebianca.it) in Rome on September 8, 2007, has been an opportunity to present a first glimpse of the more comprehensive WikiCity project to the public. This first implementation allows people access to the real-time data on dynamics that occur where they are at that moment, creating the intriguing situation that the map is drawn on the basis of dynamic elements of which the map itself is an active part. ‘How do people react toward this new perspective on their own city while they are determining the city’s very own dynamic?’ and ‘How does having access to real-time data in the context of possible action alter the process of decision making in how to go about different activities?’ are our guiding research questions.

The overall WikiCity research program considers such questions in a larger context that includes the active uploading of information by citizens, local authorities, and businesses regarding an ever increasing field of data; an elaborate approach to semantic data structures to enable novel ways of querying the data; and a rich array of multimodal access interfaces for users to interact with the data in a meaningful way.

The remainder of this chapter is structured as follows. Section 2 describes the project, taking into account different aspects of creating an open platform. Section 3 describes WikiCity Rome, first implementation of the WikiCity concept. Section 4 describes relevant work related to the WikiCity concept. Section 5 describes the design concept and different application scenarios, while Section 6 deals with access modalities and interfaces. Section 7 describes the software infrastructure and its main elements. Finally, Section 8 describes directions for future work and conclusions.

WIKICITY

People moving and acting in a city base their decisions on information that is, in most cases, not synchronized with their present time and place when making that decision. How often have you arrived at the airport just to find out that your flight has been delayed, or been surprised by a traffic jam, or found that a product is out of stock or a service operator busy at the moment you need it.

In the same way, a person acting in a city contributes himself to dynamics of which others are not aware when making their decisions. Looked upon in this way, a city resembles what Deleuze and Guattari describe as a rhizome (Deleuze and Guattari, 1977). The rhizome is a philosophical network structure where every part is necessarily connected with every other part of the system. There are no preferential connections because every connection alters the overall network structure. As a consequence, the rhizome cannot be plotted since the plotting action itself is part of the rhizome and thus in the very moment of plotting its structure, the structure changes.

The WikiCity project, in a similar way, is concerned with the real-time mapping of city dynamics. This mapping, however, is not limited to representing the city, but instead becomes instantly an instrument upon which city inhabitants can base their actions and decisions in a better-informed manner. In this way the real-time map changes the city context, and this altered context changes the real-time map accordingly, with the ultimate aim of leading to an overall increased efficiency and sustainability in making use of the city environment.

Will such a WikiCity lead to more people attempting to be at the same place at the same time or in an increasing number of different places at different times? Designing a tool to address such a question requires considering whether and how the real-time map is capable of communicating different and context-based information to users.