

# Interaction Design for Bogota: Civil participation and public space construction

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**Abstract:** *The ubiquity of digitally enhanced objects has made our social and cultural experiences to be mediated by electronic and digital products, and the vast and mostly invisible layer of technology that is being deployed in Bogota, Colombia, will have a substantial impact in our local public space. Design disciplines have the responsibility to actively engage and address problems and opportunities created by new technology developments. This paper will focus on the theoretical framework and research approach, to provide foundations for local upcoming research projects dealing with public space and digital technologies.*

**Palabras clave:** Public space, urban informatics, interaction design, action research, design research.

In recent years, a growing interest in developing digital interfaces and experiences has been amplifying their influence range, making our social and cultural experiences to be mediated more and more by electronic and digital products, due to their increasing ubiquity (Dunne, 2005). This situation, is a clear signal of the installation and reinforcement of a vast and most invisible technology layer (Wessner, 2009), that will certainly have a large impact in how we relate to each other. In particular, current local government initiatives in Colombia are deploying large digital networks (Cobertura red de fibra óptica, 2010), aiming at providing connectivity to most citizens: by 2014, 700 out of 1100 municipalities should have access to fiber optics coverage. But connectivity extends beyond public initiatives, according to Ministerio de Tecnologías de la Información y las Comunicaciones (MinTIC), more than 43 million people are subscribed to privately-owned mobile services (Sistema de Gestión..., 2010).

This technology democratisation, will make very different groups converge in a common space, fostering public exchange. In this regard, Eriksson, Riisgard & Lykke-Olesen (2007) definition of public space is convenient to understand how this emerging territory operates, if it is acknowledged as the place where individuals from a community assemble, and identify themselves as part of a larger collective, giving it cultural, social and personal meaning. But the approach does not lack problems; Shepard (2007) points at a sensitive one, explaining that both place as location, and the dialogue supporting structure are now perceived as separate domains; thus reducing their capabilities to support free and open use,

obstructing what Habermas (1992) outlines as the geography where people meet to discuss matters of public interest. On a local perspective, a former Mayor from Bogota, describes that in any culture, in an intrinsic and non-explicit way, identity definition limits are transmitted, making any new member play in compliance with pre-existent rules, prevailing amongst those who are already interacting. It is in this way, that essential and context-relative codes are established, regulating the social context (Mockus, 1998). According to Durkheim (Cited by Mockus, 1998), these codes exist beyond the individual, are framed within the collective, and dictate how the structure works. Code definition, acknowledgement, and reproduction mechanisms delineate an identity that includes in terms of action, what is possible, and is context-dependent. This leads to think that, depending on how an individual has been educated, and the place he finds himself at, he will do and say specific things that otherwise he would not, changing what he says and does when located somewhere else. Cultural limits define what one can, and can not do, thus making given contexts recognisable because of the culture that embrace them: their identification depends on the particular cultural grasp and perspective of each individual, giving it a singular meaning, that builds on the collective idea. To Augé (2008), the anthropological place is where such traffic happens, where the arrangement of space within a particular social group, is made out of individual and collective practices, and both single members and the collective as a whole think about their identity and their relationships, constructing identity symbols of the group itself (shared by the whole), of individual identity (of a particular group, or an individual in relation

to others), and of singular identity. Here, the process of internalizing context-associated limits is essential for cultural reproduction, and this leads to infer that it is very likely that a series of social afflictions stem from cultural reproduction. Mockus (1998) anticipates possible relationships amongst individuals in circumstances where there are no key cultural reproduction elements, and also foresees possible ways to facilitate interactions between strangers, in inclusive and open environments. His conclusion, is that what is important to motivate self-regulated interaction in public space, is to engage in behaviour shaping activities. To undertake such task, Mockus conceives and frames his *Plan Formar Ciudad* (City Shaping Strategy) within five main objectives, that were core to his administration and aimed at having a positive impact on comportment:

1. Raise regulation compliance in regards to co-existence.
2. Civilian self-regulation [...]
3. Attitude change towards conflict.
4. Increasing of expressive capabilities: communication, expression and interpretation elements are to be encouraged [...]
5. Public space: highlight it, and make it recognizable. (Mockus, 2008).

It is important to emphasize that these objectives are not part of the current administration, but as central and definitive part of a past one, they are a key reference, and largely influenced how Bogota and its citizens now deal and interact with each other. As direct effect, many far-reaching government policies and technology deployments have been encouraging citizens, government agencies, private industry and academia to engage themselves in digital projects beyond laptops and common computing devices. However, according to Shepard (2007), as consequence of a number of public policies and corporate strategies, public space is being deprived of its natural capabilities of supporting free and open use, contributing to the already mentioned fractured perception, where physical space is unrelated to the once integrated discussion arena. This forced-upon regulations, now established by entities foreign to public space, give room to what Augé (2008) calls the non-place, a space that is non-relational, non-historically-sound nor affected by identity. With the proliferation of the non-place, the role of public space as an exchange plaza and collective construction field, is diminished to an unchanging state. In order to restore the now mis-

sing relational conditions, the anthropological space is required to take place again. Many local initiatives commit efforts and resources to understanding the problem, from a research area that lies within the urban computing multidisciplinary research field, studying the interaction of the urban space, people, technology and information (Scheible, 2010), and cover a wide range of projects, going from environmentally aware units (Estación Socio-Ambiental..., 2007), to cartographic projects connecting both the digital and physical realms (Antenamutante, 2011) (Cartografiassonoras, 2010). But apart from a number of projects, the problem has been little discussed by local design academics, and the discipline is to engage immediately in the exploration on how these technologies are conceptualized and delivered (Wessner, 2009), by studying the problem as it takes shape in Bogota. There is also a need to define a formal methodology to understand how new digital technologies operate in our context, through the lens of the design project. This methodology is explained in the following section.

## Methodology

In order to establish a research framework to work within, and according to current design research methods, the approach stems from Archer's (Cited by Bayazit, 2004, p.16) definition where "Design research is systematic inquiry whose goal is knowledge of, or in, the embodiment of configuration, composition, structure, purpose, value, and meaning in man-made things and systems", and extends it including the idea of design artifacts as knowledge materializations, guided by values and not by an objective search for truth, where their primary intention is to change reality (Press, 1995). This extended definition of design research incorporating design artifacts as knowledge vessels, demands actual design practice to be integrated in the process, and as stated by Archer (1995), the most appropriate research strategy that allows merging practice with systematic inquiry is Action Research (AR), as it integrates both practice and knowledge construction, and permits taking into account the native cognitive mechanisms operating in design, that aim at working with solution-focused strategies (Swann, 2008).

According to Swann (2008), several conditions are to be met when practicing Action Research:

1. Its subject matter is situated in a social practice that needs to be changed.
2. Researchers work in equitable condition and in co-

llaboration with all stakeholders.

3. The project proceeds through a spiral of cycles of planning, acting, observing, and reflecting in a systematic and documented study.

a. Planning (P): includes problem analysis and a strategic plan.

b. Action (A): refers to the implementation of the strategic plan.

c. Observation (O): includes an evaluation of the action by appropriate methods and techniques.

d. Reflection (R): reflecting on the result of the evaluation and on the whole action and research process, which may lead to the identification of a new problem or problems and hence a new cycle of planning, acting, observing and reflecting. (PAOR).

This PAOR sequence is analogous to broadly used interaction design methods, where iteration is decisive and is acknowledged as one of the most streamlined ways to develop digital interfaces (Rudd, Stern & Isensee, 1996) and experiences.

To deeply understand and unravel how AR can be put into practice in a local design scenario, a research project is proposed, to study the interaction of the urban space, people, technology and information in Bogota, where a number of PAOR cycles are to be executed at a rate of one per year, during a time-lapse of three years. The first year contemplates a number of in-depth investigations about differentiated but not disconnected issues, including how public space is understood and characterized in Bogota, identifying locally available technologies, a state-of-the-art analysis containing both academic and non-academic projects, a first-year plan development, a lo-fi and lo-res (Rudd et. al, 1996) prototype development and deployment, data gathering, and both a detailed and general evaluation of the outcome, and an evaluation of the overall process. Conclusions originated from this first cycle inform the following cycles, and are key to identify trends, preferences, problems, opportunities and tendencies that need to be addressed.

Two PAOR cycles spring from the first one, and will refine each step, following the same structure in terms of re-visiting what was previously done, and differ from each other due to an increased fidelity and resolution in prototype development and deployment, data accuracy, resolution and stakeholders' participation.

## Discussion

From this perspective, it is clear that the expansion of

digital coverage in Bogota will have substantial consequences in how citizens interact. It also means that there will be a leap in numbers of digital products, services and experiences available to the general public.

In attention to these upcoming events, design disciplines have an enormous task and responsibility, to participate and address the emerging problems and opportunities. But responsibility calls for action, Matthews et al. (2008) and Moggridge (2007), observe that to illustrate and understand a design project's nature, it is most important to decipher context-specific attributes and user's characteristics by directly prototyping where interventions are going to take place; the social fabric should be unraveled, and relationships must be distinguished. That explains the purpose and need of engaging in a research project as soon as possible.

Foreseeable limitations of the study include local availability of emerging or promising technologies, or excessive public interest in the project due to false expectations, leading to biased data. These limitations must be addressed accordingly.

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