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Space, territory and technological innovation in the CEUs

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Abstract

The current challenges in the field of technological innovation are discussed on the notion of smart cities. The experiences with open innovation citizen laboratories for social transformation of the Sensitive Cities Laboratories – LabCEUs, from Brazil, is discussed in this text: an approach of technological innovation is introduced, a political and institutional landscape is shaped regarding the spaces in which such laboratories are inserted; and the experiences of InCiti - Research and Innovation for the Cities at the Federal University of Pernambuco (UFPE) on emergent urbanism rises the discussions about a city as a learning spaces, using technologies as model for a community based technological innovation perspective. It is a reflection on potential issues to be deployed in cultural and technological actions and policies.

Author Keywords

Digital inclusion, Smart cities, Sensitive Cities, Ministry of Culture of Brazil, Brazil.

ACM Classification Keywords

K. Computing Milieux, K.4 COMPUTERS AND SOCIETY, K.4.1 Public Policy Issues

Introduction

In this investigation, the current challenges in the field of technological innovation are discussed on the notion of sensitive cities and the experiences with open innovation citizen laboratories for social transformation. Far from conclusive, this text intends to emphasize issues that permeate the Sensitive Cities Laboratories - LabCEUs - and is divided in four brief parts. First, the approach of technological innovation is introduced; after that, a political and institutional landscape is shaped regarding the spaces in which such laboratories are inserted; the third part focuses on emergent urbanism from the experiences of InCiti - Research and Innovation for the Cities at the Federal University of Pernambuco (UFPE). Finally, the last part tries to raise potential issues to be deployed in cultural and technological actions and policies.

Technological Innovation and Territories

Due to the continued inability to fully participate in the and modern consumption patterns, the so-called lower class embodies solutions that stimulates the conscious and imaginative use of different technologies. To understand the deeper dimension of technological and social innovation in our times, we shouldn't stick to the latest developments of the great industries of consumer goods, nor the new market of entrepreneurial start-ups focused on immediate profit and fed by trade secrets process, patents, copyrights and other private knowledge appropriation formats [1]. It is urgent to consider a technological innovation from a different perspective. We have focused on the social. This change implies on recognizing and stimulating solutions and techno-social arrangements produced and developed through regional collaborative processes, aiming to promote the common welfare or better living.

In this sense, as it will be properly detailed below, the outreach program Sensitive Cities Laboratory - Lab CEUs promotes joint practices through a cross platform that aggregates cultural agents and the university to mobilize actions and mediations from their experiences, combining processes of learning, network exchange and knowledge production in digital laboratories scattered throughout Brazil's five regions. Later, this platform is extended to new actors through open public calls for cultural occupations of public spaces with technological innovation adjusted to the reality of each territory.

Instead of cutting edge technology, this is about technology on the edges - which is disseminated globally, while being specific in each place: the Brazilian gambiarra (workaround) is synonymous with the same process known as jugaad in India [2]. Reflecting on this, the game between scarcity and abundance appears as central. Those who don't have the means or resources to fully participate in the last contemporary technological standards can modify - in their own environment - the impact and the purposes of industrial objects, due to a constituted collective technicality culture working on the local territory in everyday life. Material scarcity is revealed as creative abundance, cornucopia of collaborative and dynamic shared practices. Hitherto overlooked or even suppressed, these ways of being / constitute themselves as a kind of poverty wealth. What appears to be a weakness is therefore a force, a result of the organic integration between the territory and its inhabitants. It is, in short, returning its gaze to the social territories not from the perspective of grace, but of power.

This technology happening in the edges also relates to ten years experience of shared digital culture in Brazil,

boosted by the branch of public investment for “Pontos de Cultura” or Cultural Points. Not necessarily subservient to this investment, but ensuring their spaces: creating nodes between communities and strengthening their networks. "We recognized in the community that: a Cultural Point is the people themselves" said Beth de Oshun, a cultural leader working in the neighborhood of Guadalupe (outskirts of Olinda - PE) by sharing knowledge and the appreciation of ancestral practices in her territory, combined with a successful technology and new media experimental research involving a media lab [3], a free radio (Radio Amnesia) and web games creation, such as Ifa Tales [4].

This example reinforces that - even if you speak of *gambiarra* - it is a techno social innovation that expands the ways of understanding in the fields of education, culture and technology. It is strategic that each territory is stated in its unique position and active itself in the construction of singularities, from the different ways of living and being exercised in everyday life, such as subjectivities machines [5]. The way of living, that is specific to each person, creates step by step, plural practices of everyday constitution, often invisible to the systems that observes it (like the mainstream media, the state and the market). Every time such practices reconfigures their own actors and allows direct intervention in urban areas. [6]. That is, instead of seeking solutions that are beyond the territory to the territory flee, overflowing, going beyond measure [7]. It is this context that meets the needs of stimulating collective occupation actions in territories for socio-cultural and economic transformation.

Thus, driven by local ownership of global technocultural devices, making people capable of transforming local reality, some of these areas of training and production on the outskirts emerge as alternative both to the commercialization of space and the homogenization of territories by the market - or by the speeches. In these places, the public and social purposes are shown in the foreground, compared to those based on private profit, allowing class actions to expand its role in the economic structure while subverts it in the meanwhile. The effects of the search for citizenship and social welfare linked to territorial rooted culture become a creative power for social transformation, expressed in the technical imagination. [8]

Traditional collaborative methods and emerging practices in network can create other economies, other cultures, other discourses and new territorialized policies, dealing with both the experience of scarcity, as with solidarity coexistence. It is not to redefine the concept of development, but to question the very notion of it: invent a cultural vision of the economy rather than an economic view of culture [9]. For this, it is necessary to pay attention on the relationship between local clusters and national resources and planning. The challenge is to avoid models that recognizes only what can be translated into measurable production, and encourage the work of pollination, that is, the work of culture as a relationship, intensity of social relations to world's production [10].

CEUs and policies on digital culture in Brazil

Under Brazil's Presidency of the Republic Civil House coordination, the project of Arts and Unified Sports Centers - CEUs is designed from an inter-ministerial perspective, involving Ministry of Culture, Ministry of

Sports, Ministry of Labour and Employment, Ministry of Social Development and Fight Against Hunger and Ministry of Justice. The Presidency's designed space consists of a square, bringing together cultural programs and activities: sports and leisure, training and qualifications for the labor market, library, social assistance services, violence prevention policies and digital culture. In common, the goal of promoting citizenship in high social vulnerability territories in Brazil. After its construction, civil society mobilization to activate the unit is performed, seeking to add initiatives of "socio-cultural, social assistance, recreational, leisure, training and qualification." It is worth noting the absence of a socio-environmental approach in the initial proposal, but on this issue we will discuss later.

The CEUs' cultural facilities are part of a system, which also involves the Social Assistance Reference Center (CRAS) and the crowded sports facilities. Regarding the implementation of physical spaces for the culture, the Ministry of Culture tried the former never implemented experience of BACs [11] and, more recently and specifically, the More Culture Program (Programa Mais Cultura) or PAC Culture, on the shaft of Culture and Cities. Unlike the standardization of CEUs projects, the More Culture Program methodology seemed to allow a wide range of trials in architectural and urban creations, as noted by the staff of the General Coordination of Social Mobilization and Management of Cultural Infrastructure Board (DINC) of the Ministry. Regarding the More Culture Program experience, commented: "When the debate on the PAC Squares was inserted by the Civil Office in the Ministry of Culture's agenda in early 2010, there were 26 More Culture Program equipment I - cultural spaces and libraries - being implemented under the methodology.

[...] Within the architecture, the program developed many references, including specific projects for indigenous and quilombolas areas as well as considering local diversity, especially when it came to cultural practices, bio-climate, construction techniques (wood, soil-cimento, biobuilding), area availability, size of the beneficiary population and resource allocation." About CEUs, the analysis is different: "As in other equipment of PAC 2 Citizen Community, the Union offers municipalities architectural projects of reference, which should be adapted to the land and can be modified, considering that there will be no change in the program and space capacity." However, observed: "In practice, projects have been somewhat modified and, although the models entail in a less than desirable architectural standardization across regions, cultures and Brazilian environmental conditions, supply reference design is desired by municipal agencies, as it facilitates the execution by its already diminutive engineering and architecture teams." (Ibid, ibid) In fact, the main legacy of the More Culture program for CEUs was not the physical structure of the building, but its management architecture. Despite having the construction financed by the Federal Government and being maintained by the Municipal Government, the CEUs provide shared management arrangements, through a Local Management Group, formed by the cities' organized civil society and community. The status model provided by the Ministry of Culture also requires at least one place of organized civil society quota be allocated to the jetty or municipality Culture Points (Pontos de Cultura) programs. Although sometimes this prediction is not carried out in practice, surely such a contractual definition is an important step for the promotion of citizenship in these territories, pointing to small-scale participatory democracy

practices, crucial to overcoming the current crisis of representation in Brazilian society. In March 2015, the federal government planned to build 348 units, having opened 58 of them. The construction is paid by the Presidency, but the maintenance of the space is up to the City Hall. Completed the work, it receives R\$ 21,950.00 (around US\$ 7.000,00) to carry out a process of social mobilization to drive activation and formation of the Local Management Group.

Regarding the relationship of CEUs with the Living Culture (Cultura Viva) Program and the network of Culture Points (Pontos de Cultura), the DINC team comments that "to the extent of materialization of all the equipments, it will strengthen the integration of this cultural infrastructure with Living Culture Program, which should count with actions and specific budget of the Ministry of Culture in 2015, institutionalizing support for Living Culture agents in CEUs Squares and its territories and the occupation and participation in the management of spaces by Culture Points. [...] The equipment must increasingly act as organizers and promoters of the network of Culture Points, and vice versa, strengthening its appreciation of the role of leadership on cultural diversity " [12].

Through the National Endowment for the Arts (FUNARTE) and partnerships with federal universities, the Ministry of Culture also provides timely support for some CEUs units the occupation of open buildings. From this collaboration with university research groups, resources were made available for the development of actions to stimulate cultural occupations of CEUs in three areas: digital culture, film clubs and music, respectively involving the Federal University of Pernambuco, the University of Great ABC and the

Federal University of Goiás, generally through the extension sectors of these institutions. Cultural occupations programs in CEUs opened a precedent within the Ministry of Culture in the articulation of a network of research groups in universities and civil society to manage and implement actions in cultural and scientific scale. In this paper, we will focus exclusively on Digital Culture shaft, in which arises Sensitive Cities Laboratory - Lab CEUs. Beforehand, a valid question could be done about the effectiveness of segmentation support for languages, as often these practices are interconnected.

In the mid-twentieth century, Anísio Teixeira said schools were democracy makers. Currently, the technological tooling connected to the Internet also becomes a possible democratic machine with the opportunity to broaden the participation process, through the exchange of ideas, exercise of contradictoriness and the search for co-existence. Earlier in this century, telecentres, initial cells of socio-digital inclusion in Brazil, provided citizens with access to computers and internet for a decade, often being the only option available on the sites, it also became a meeting place. Since then, they metabolize and still foster innovative formats and practices from initiatives that go beyond simple access and exploring the potential of networked production. At the same time, social situation and access to technologies also changed dramatically in the last decade. Thus, the embryonic structure of telecenters, partially modified from north to south of Brazil through Digital Culture Action at Ministry's Living Culture program, enabled and stimulated the emergence of experimental laboratories and technological communities all around the country, where new forms of sociality appears and develops with

full interests on reform and expansion of conditioned policies. And urges Ministry of Culture's support and promotion of such initiatives related to contemporary digital culture. Proof of this urgency is the difficulty of incorporating other Digital Culture principles and proposals folders of the Ministry of Culture, as it made over the past few years: the approaches of these policies with the Ministry of Science, Technology and Innovation (MCT) i.e., are meager near the strong potential of practices that are already developed in community technological innovation groups in Brazil. In addition to not incorporate the guidelines, the MCT seems headed toward diametrically opposed when encourages the use of private and proprietary technologies, such as Facebook.

Reflecting on such transformations in Brazil, as a result of a research on creative experimental arrangements in digital culture for the Ministry of Culture, Felipe Fonseca proposes an alternative to the notion of 'free culture' - central concept in political conception of Digital Culture Action.

"You can, instead, work with the idea of a "culture of openness", procedural and always dependent on intent and context. A culture of openness work as a framework in which various forms of action could be related to. The very publication of multimedia content with free licenses, through ancestral cultural research, by encouraging innovation and socially relevant creative production, or researches of possible exchanges between permaculture, solidarity economy and digital culture - all this would reference the field, yet to be set completely, of the culture of openness. On the one hand thus escapes the limitation of transactional logic which devalues the potential of free

production by eventual low range of a particular cultural product account, and on the other hand states the intentional gesture of generosity as part of cultural heritage in humanity for thousands of years before the first computer creation" [13]

It is not to ensure the maintenance of a particular social role (as the user of technology) in a connected environment, but to recognize and leverage new roles and expression possibilities that can be directly or indirectly articulated with these new technologies. From this perspective, and the accumulation of practices and researches established in the context of digital culture in Brazil, formed the conceptual bases, practices and policies to implement in multimedia laboratories of CEUs the pilot program Sensitive Cities Laboratory - Lab CEUs. Conducted through a partnership between the Ministry of Culture - Department of Cultural Policy and the Federal University of Pernambuco, through InCiti - Research and Innovation for the Cities. In addition to InCiti/UFPE extension researchers, the Lab CEUs team consists of participants from different Cultural Points in different states, with extensive experience in projects involving digital culture, Culture Points, media labs and social technology in Brazil.

In March 2015, the Sensitive Cities Laboratory began the occupation of multimedia laboratories (formerly called telecenters) in 10 units of CEU: Sao Felix do Xingu (PA), Horizon (EC), Petrolina (PE), Luis Eduardo Magalhães (BA), Sete Lagoas (MG), Colatina (ES), Sertãozinho (SP), Campo Largo (PR) and Erechim (RS). Although far from each other on Brazilian map, one can see several common factors to these units, starting with the territory where they operate. Located in medium-sized cities peripheries, the CEUs are

constructed in high social vulnerability areas, often locally stigmatized by crime zones. All projects were selected from a Public Call, which received over 250 proposals from all over Brazil, showing great potential and demand for support on technological innovation in the suburbs, involving a wide range of practice areas as artistic languages, interactive media, traditions and territories issues. The structure of LantUs program boasted a network of thinkers and techno-cultural markers combined with research groups in Federal Universities to manage and implement laboratory practices in cultural and scientific scale with a cross-cutting focus among the suggested themes: communication, interactivity, territories and roots and traditions. Articulating different network initiatives in these cities, the Sensitive Cities Laboratory aims to experience technological practices that encourage new relationships and dialogues between people, the city and the environment around them, rethinking the existing structures of urban spaces so as to modify the everyday life. By technological practices one not only understand computers and machines, but mainly social relations, the thought and the ways in which the community takes ownership of the city. The Sensitive Cities Laboratory seeks to support and encourage the emergence of community innovation laboratories where new forms of sociability and technicality may arise and develop. These laboratories are based on access to low-cost technologies, through a sharing model idea that allows community to become stronger with their own experimental design development. Therefore stimulating the construction of several do-it-yourself sensory cartography devices and aesthetic expressions, which are, in its genesis, intellectual innovations and economic production drivers. The proposed cultural occupations also distinguishes an emerging form of

neighborhood construction, through a platform where any action - coming from various regions - communicate with each other, and establish intersections as a remote work base.

Because of this constitutive character, in a scenario where internet access is growing, it is also essential that these laboratories connect primarily to the city, operating as a hub, encouraging the production standpoint for potent technology appropriation meetings that leads to social transformation. Sensitive Cities reveal themselves as a kind of living operating system, a complex system of emergent properties, where society and nature are intertwined. While a system of objects (natural, technical, objectives) conditions the human actions (social, cultural and subjective), the system of these actions also leads to the creation of new realities and new worlds: lies in this constant interaction and the dynamic transformation of spaces.

Emerging Urbanism

InCiti - Research and Innovation for the Cities is a extension and research pro-rector think-tank at the Federal University of Pernambuco that brings together academics committed to the quality of urban life. The team consists of architects, biologists, botanists, sociologists, psychologists, engineers, economists, designers, media professionals, computer scientists, historians, activists among others. With an interdisciplinary and systemic perspective, the team is dedicated to investigate the urban experience, analyze qualities of spaces and behavior of its inhabitants, as well as to try and understand people's daily reflections about the city.

In practice, InCiti implement Sensitive Cities Laboratory and Capibaribe Park projects: the first is the main perspective of this text, and the former is a municipal program for urban infrastructure aimed at transforming Recife in a city-park in the next three decades. This action covers 35 districts - one third of the city, and seeks to increase by almost twenty times the urban green area. The Capibaribe Park also develops dialogue devices within the population, such as ideas contributions and experimentation workshops on the banks of Capibaribe river; or a collaborative web platform to promote a democratic collective consciousness.

Far beyond the notion of smart cities based on private solutions for surveillance and control, Sensitive Cities Laboratory and Capibaribe Park mobilizes the cities' sensitive side, watching them as organisms made by their occupants, their mineral nature, animals, plants and their urban and technological infrastructure. The environmental dimension is critical: for more than urban solutions designed top-down, interests here an emergent urbanism, tactical inside and from this hybrid organism, able to strengthen resources, territories, cultures, practices and common knowledge. Our interest is cities as constant learning spaces.

"The emergent urbanism or down-up planning is different from urban planning by relying on citizen participation as an important point of construction of the city. We could summarize by saying that the emerging urbanism performs a mapping of the role of citizens and residents as low city producers, compared to the traditional urban planning vision. Moreover, this other practice of urbanism is not only emerging to come low up, but also because often come to the

surface in times of crisis, where some authors derive a similar notion of survival of urbanism." [14]

Possible Futures

We think about territories and people considering their movements and flows, not as static entities. Their stories and relationships with places are important in sharing knowledge and needs, thus to envision effective changes to the city. Where do they come from and where do they go? Human flows shapes territories that correspond to city's gear. Also, what are the reactions of natural, political and economic factors that lead families and groups to constantly change their territory, having to rebuild and reorganize over and over? Faced with a Brazilian historical context, between removals, occupations and habitation programs such as Minha Casa Minha Vida popular habitation program, this phenomenon is latent and, with so much diversity, how do these contradictory stories share the same space?

We are facing a challenge: to propose innovative technologies rethinking spaces as laboratories and to proffer something beyond internet access and basic computer skills. Can we offer tools to community grouping and empower interventions aiming to improve their realities? What are the possible dynamics for this challenge? Lab CEUs raises these issues in order to overcome them through practices and technologies that can emancipate interests focused on the quality of the space we live in.

We believe that these laboratories can contribute not only to the cultural, social, emotional and economic impact, but also to promote humane practice - from a participatory knowledge process that involves the digital and information technology - able to expand and

diversify choices, reframe cities: an appropriate technical and political mix, in order to raise awareness on territory importance for its inhabitants as identity spaces of their insights, stories and actions. With this inspiration, we articulate the experience of Lab CEUs - Sensitive Cities Laboratory as spaces to promote ways of living/making based on experimentation and collaborative learning, using technology and digital networks focused on citizens innovations to their cities.

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Spaces in which people and social groups with different knowledge and levels of expertise can come together to develop technocultural trials, experiment the exercise of flowering inventiveness and enhancement of the demands for collective and individual solutions. We consider these initiatives structural to build a real human space where a new landscape becomes possible.

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