

Information and Communication Technologies and the Public Spaces: Reflections on Exploring a New Relationship

First Results from COST Action CyberParks TU 1306

Carlos Smaniotto Costa

Universidade Lusófona de Humanidades e Tecnologias, CeIED, Education and Public Spaces, Portugal
smaniotto.costa@ulusofona.pt

Ina Šuklje Erjavec

Urban Planning Institute of the Republic of Slovenia, Ljubljana, Slovenia
ina.suklje-erjavec@uirs.si

ABSTRACT: The interaction of ICT devices (smart phones, smart watches, tablets) and wi-fi connections and public open spaces (parks, gardens, squares, plazas, etc.) is not new but is growing at a rapid pace. The consequences of this intertwining are not yet fully investigated, this fact accompanied by rapid development and increasing application possibilities, challenges ICT experts, urban designers and social scientists. Based on first analysis carried out within the Project "CyberParks" we discuss (1) how ICT affect the use of public open space and what are the risks, and (2) how ICT can provide support for improving the production and design of public spaces. Hence, what is the contribution of ICT to transform our cities into more social environments, rather than just more high-tech? Therefore, aspects as entertainment, leisure and recreation, social media and the use of public spaces for demonstrations or flashmobs, and new elements of street furniture will be explored.

Keywords: ICT devices; public open spaces; street furniture; Project "CyberParks"

1 INTRODUCTION

We are used to see people relaxing outdoors with newspapers and books, and now increasingly with smart phones and tablets. The digital has become part of our outdoor lives and that trend is set to continue (Thomas, 2014). In this paper, we discuss the intertwining of digital media technologies (smart phones, tablets, wi-fi connections) with the public open spaces (parks, gardens, squares, plazas, etc.). This discussion is based on a first knowledge and experiences exchanges carried out within the Project CyberParks. The consequences of this relationship are not yet fully investigated; this fact accompanied by rapid development and increasing application possibilities, challenges ICT experts, urban designers, and social scientists.

The leading questions in CyberParks are twofold: first, how do ICT affect the use of public open space, what are the risks, and how the concept of public spaces fit into the digital age. Second, how can ICT provide support for those involved in the production and design of public spaces, and what opportunities ICT offer to better understand the way people use and would like to use these spaces. Hence, in CyberParks, several aspects of the relationship of ICT with public spaces and urban design are being investigated. The first results show that ICT cause and enable innovative outdoor social practices, which could challenge spatial and social experts to use them in policies, design, and research in order to produce responsive and inclusive urban places. Places those are attractive for different users, also for those who are more attached to ICT, and spend nowadays a significant amount of their daily time online and indoors. This raises the question how to link the real and virtual worlds without losing the benefits of both, what in our case means to link new technologies into urban open space design to make its every day uses more attractive and challenging, and inspiring people to live a more active life. All this should happen without transforming urban spaces into high-tech virtual realities, disconnected from

nature and people, but taking advantage of the opportunities provided by modern technologies to make cities even more people and environmental friendly. On the other hand, there is also from the ICT's perspective arises the question what kind of challenges new urban functions, uses and design ideas bring for future ICT development.

1.1 The CyberParks Project

For finding adequate responses to all these questions and develop new ideas the Project "CyberParks - Fostering knowledge about the relationship between Information and Communication Technologies and Public Spaces" has been developed. It is a network of 70 experts from different working fields and scientific domains, coming from 28 different European countries and financed for four years (June 2014 – May 2018) under the COST-Framework (www.cost.eu/domains_actions/tud/Actions/TU1306). Allowing networking, exchange, and capacity-building activities the COST Programme offers an ideal framework for exploring such challenge. Bringing together a high number of researchers and practitioners working on related fields, COST enables a regular scientific exchange as well as gathering the fragmented research within scientific areas and countries.

The participants closely cooperate towards putting together the available knowledge from different aspects and explore the intertwining from different perspectives. In order to bridge the knowledge gaps and bringing up new ideas an emphasised interdisciplinary cooperation is necessary, ensuring all possible and necessary interlinking between ICT-based devices, public urban open spaces and new values, lifestyles, and needs of people are being considered. CyberParks acts through a transdisciplinary network of scientists, researchers, ICT experts, urban designers, landscape architects, and stakeholders enabling a look at long-term perspective and a bigger picture of the implications, opportunities and challenges the amalgamation of the virtual and real worlds pose. The project goals are sharing knowledge and experiences, analysing, drawing lessons learnt and preparing the outcomes by in five trans-disciplinary Working Groups. These are: Digital methods, Urban ethnography, Conceptual reflection, Creating CyberParks and Networking and Dissemination. The last works as a think-tank and is in charge of tailoring and organising knowledge transfer, young experts' platform, formulation of research perspectives and follow-ups. Further information about the project contents, participants, and results can be seen at www.cyberparks-project.eu.

2 DEFINING KEY TERMS

2.1 ICT – Information and Communications Technologies

The term Information and Communications Technologies (ICT) refers in this work to the different forms of communication by computer technology and digital devices. This includes the Internet, wireless networks, tablets and smart phones, and other communication mediums. ICT provide society with a vast array of new communication and information capabilities. Among all those opportunities the most important for this paper, and for CyberParks Project, is the communication aspect. First, new ICT devices not only enable, but also strongly attract people to communicate in real-time with others, also in completely different locations. Second, for the possibility of gathering information about places, they are going to or are already in, and of sharing information about real places to build virtual ones, something that was not possible before.

Social media is turning to be a big part of contemporary life. People more and more build and maintain their social relationships through various social media, and this affects increasingly the way they organise their everyday lives in the city. New socio-spatial practices have emerged, both on a collective level (flash mobs, the use of ICT in various political uprisings and riots, bike and car sharing programmes), as well as on an individual level (the use of navigation systems and recommendation software to find interesting places to visit. To this topic belong also the

annotation of places through Twitter, Facebook or review sites such as Yelp, using smart phones to arrange spontaneous meetings with friends or strangers, talking via mobile phones or exposing private topics in public or on social networks, posting private photos, sexual desires, and problems in school, etc.). For this reason, ICT is often studied in the context of how modern communication technologies affect the interactions between people and society. The passion of using technologies such as instant messaging, voice over IP, and video-conferencing and similar for immediate sharing information, experiences, and feelings brings completely new ways of uses and behaviours of people, also in urban places. See a person talking to “itself” on the phone or looking into mobile phone or tablet while walking or sitting in an open space is even more usual than see people talking to each other or observing the surroundings. Recently more studies are devoted to negative aspects of this virtual interaction. *Cyberbullying* can be mentioned as one example of threatening human behaviour or new form of aggression that has increased among adolescents and adults during recent years in the virtual environment of the Internet (Katzer, 2007; 2013, Fetchenhauer & Belschak, 2009).

The developments over the past thirty years transformed ICT into an inherent part of society. It has grown into an important social medium. People build and maintain their social relationships through various social media, and increasingly this affects the way they organise their everyday lives in the city. New socio-spatial practices have emerged, both on a collective level (flash mobs, the use of ICT in various political uprisings and riots, bike and car sharing programmes), as well as on an individual level (the use of navigation systems and recommendation software to find interesting places to visit. To this topic belong also the annotation of places through Twitter, Facebook or review sites such as Yelp, using smart phones to arrange spontaneous meetings with friends or strangers, talking via mobile phones or exposing private topics in public or on social networks, posting private photos, sexual desires, and problems in school, etc.).

Relevant for the work on the interaction between ICT and public spaces concerns the features of ICT to allow on-demand access to content anytime and from nearly anywhere. Hence, the property to engage individual users as well as groups of people to interact and congregate online and share information, and bring them to be outdoors, are relevant aspects.

2.2 Public Open Spaces

For our purpose *public open space* is to be understood as a collective term and in its broadest sense, as an unbuilt space inserted into the urban fabric, planned, designed and managed with particular purpose and used by the general public, regardless ownership or in terms of rights. The network of public open spaces includes both the natural and built environment. Among them are streets, squares, plazas, market places, parks, greenways, community gardens, playgrounds, waterfronts, etc., each one playing a vital role in the city, whether for mobility, for social life, for leisure and recreation, and/or on account of their scenic value and ecological, environmental merits for nature and landscape preservation.

2.3 Green Spaces, Exposure to Nature and Physical Activity

Green spaces, a widely common type of public open spaces, are predominantly characterised by a high percentage of vegetation and unpaved surfaces. Due to their characteristics and multifunctional aspects, they represent irreplaceable foundation for most of the Ecosystem services in urban areas, from cultural to regulating, supporting, and even provisioning.

Green spaces are known to make valuable environmental, social, and people’s well-being based contributions to the urban environment. The roles and benefits of green spaces are extensive and multifunctional. Several authors have researched and reported on varied evidence of those benefits and functions to a greater or lesser extent (summarised in Table 1). This extensibility and multi-functionality means that a green space can bring different benefits in different ways to different users and with different results.

Table 1. A simplified list of the benefits, functions, and values green spaces can provide. (GreenKeys, 2008).

Ecological and Environmental	Natural resource, supports the protection of natural resources: preserves functions of soil, water, flora and fauna, buffers climate, opportunities for enrichment, biodiversity, wildlife corridors, etc.
Economic	Positive impact on business and property values, source of additional revenues for the municipality (events, taxes on property, etc.), is the sum of values that people, both individually and collectively, attach to nature
Social	Outdoor activities, meeting places catering to all ages, popular value of being close to nature, venue for events, fairs and concerts, fundraising, etc., nature experiences, the “outdoor classroom”, building sense of place and society,
Structural	Quality of the urban landscape, visual aspects, effect on property values, promotes the identity of a city or an area, defines urban character

Without having the intention of presenting an exhaustive list, but to illustrate their diversity, the green spaces network in a city can potentially include tree-lined streets, promenades and alleys, green squares, plazas, playgrounds and market places, gardens and urban parks, greenways, green belts, community and allotment gardens, waterfronts, churchyards and cemeteries, urban woodlands and urban “wilderness”. Green spaces increase the aesthetic appeal, amenity and values of the urban landscape, contribute to diversify densely built up and highly artificial urban environment. They allow and maintain the presence of nature in the urban environment. Here nature has a chance to develop. When integrated into the green infrastructure of the city, green spaces contribute to the connectivity of habitats, enabling the propagation and protection of species and biodiversity conservation. Aside from providing places to play, be active or relax, relevant for this work is the property of green spaces in offering the contact to nature. Even though they can be extremely manipulated, people still consider them part of the natural environment. Berman *et. al.* (2008) demonstrated that, after just an hour interacting with nature, memory performance, and attention spans improved by 20%. In UK Bird (2004) found out that physical inactivity is a major preventable health risk, which affects about 60% of the population. Palliative measures to promote the physical activity should be close to where people live and with an emphasis on walking. As recreational walking is a suitable activity to increase physical activity levels, it is also cheap to put into practice. What is not mention is the need of suitable places – places safely accessible, with low levels of atmospheric and noise pollution. To be able to offer such places, cities have to invest in their public open spaces what demands high level policy and urban planning practice (Smaniotto & Hoyer, 2014).

2.4 Understanding the Publicness of Urban Open Spaces

Important for this work are those open spaces that have or could have value for enabling the share of experiences, contributing to the called public life, the city's “publicness”, and inclusiveness. The conceptualisation of these spaces as democratic spaces is associated with “public domain”, the network of spaces that belongs to the community and is freely accessible for everyone (Smaniotto 2014). As they afford the common ground for communication and information exchange, these are the social spaces where people can democratically meet outdoors and interact with others as well as with the urban fabric reality. Public spaces, as the stage of urban life, have the capacity of embodying multiple meanings. As social gathering places, they enable the exchange between different social groups, independent of class, race and ethnicity, gender and background, etc. They are places to express cultural diversity, to relax or move, see and be seen or even be anonymous in a crowd (Thompson, 2002). The social interactions are important for defining a sense of place, for contributing to the individual physical, cultural, and spiritual well-being, for the personal development and social learning and for the development of tolerance (Thompson 2002, Šuklje 2010). In a political sense, they offer a forum for political representation, display and action (Habermas, 1990), here known and unknown people meet, here all strata of society encounter each other, here the formal and informal relationships take place. For being ‘open-to-all’ (Thompson 2007, 2002), they are

neutral territories, which could be inclusive and pluralist for accepting and accommodating differences. This concerns also their use for public purposes, such as to hold collective celebrations or to influence collective decision-making (Storch, 2011). This brings about the symbolic character public spaces can embody as representative of the collective and of sociability (rather than individuality and privacy (Thompson 2002, 2007; Smaniotto Costa & Schmitz, 2013).

Whyte (1980) pinpointed that what attracts people to public spaces are other people. If on the one hand the quality of being an enabler of social interrelations confers to the public spaces a positive connotation. On the other hand given the heterogeneous nature of the urban society with distinguishing objectives and features in its social organisation, calls for demystify the relationship between public space and social interaction, a relationship often seen with certain romanticism (Smaniotto, 2014). The modern urban environment, in its complexity, is considered one of the causes of the increasing social segregation; isolation and little involvement of people together (Gehl, 1987). Observing how people use public spaces Hampton & Gupta (2008) come to the conclusion that each user or group of users "privatise" their space, creating what they call a *cocoon*. The space is not shared, but divided and shredded individually or collectively between different users. Although invisible and limited in time, these cocoons reduce the likelihood of serendipitous encounters, contradicting the common expectations for public behaviour. Therefore, public spaces are arenas of multiple and sometimes competing interests, occupied by people unequal in gender and social and cultural class (Thompson, 2002). They can as well be locational and situational spaces of conflict among disputing interest groups and individuals (Katzner, 2011).

3 INTERWEAVING PUBLIC OPEN SPACES WITH DIGITAL DEVICES

Is there a necessity, possibility, and feasibility to interlink public open spaces with digital devices? Would not it be more suitably, especially for urban green spaces, to encourage a clearer separation between "nature" and "high-tech", rather than search for their interweaving? Should the "contacts with nature" be technology free? On the first glance, maybe the answer would be "Yes" but ... The interactions between digital and physical domains used to be considered as largely separate; nowadays, with the increased profusion of wearable ICT, mobile connectivity and interaction possibilities via social media, profoundly influence our conception of time, space and place, social relationships, citizenship and identity. We were used to see people in urban parks relaxing with newspapers, books but nowadays phones and tablets are commonly brought along. The digital has become part of our outdoor lives and that trend is set to continue (Thomas, 2014), but with hitherto unknown consequences. It is necessary to understand and to study the linking, and this means taking the challenge seriously and in a comprehensive approach.

The central foundation of our arguments is backed by existing knowledge and experience of importance of public open spaces for urban sustainability. Several works highlighted the social, ecological, and economic benefits of public open spaces, from a single as well as from a cumulative perspective. Several authors examine the relationship between environment, physical activities, and health. Recent works devote the analyses to some aspects of the interrelationship between ICT and public spaces. Smaniotto (2013) listed several examples of these interactions; De Lange (2013) explores the effect of ICT in a *hybrid urbanism*. Meyrowitz (1985) and Hampton *et al.* (2009) report on social behaviour and social interactions under the influence of ICT, Hampton & Gupta (2008) on the use of wi-fi in public and semi-public spaces, Graham (2004) on the virtual city and cyberspace. Graham & Auguri (2007) make connections among the virtual city, crisis of public space, social polarisation and the access to computers and telematics, and Souza e Silva (2006) deals with the hybrid space, a mash-up of real-world spaces with mobile technology. Recent research into the connections between technology and biophilia (Thomas, 2013) concluded that the preponderance of nature metaphors, memes and images to

be found in cyberspace (e.g. surfing the internet, twitter stream, the cloud, viruses, worms and bugs) can be understood as a way by which users imagine virtual space as a familiar physical ecology.

3.1 The real and virtual

The high levels of mobile phone and Internet penetration are underpinning a strong correlation between the real (physical), and virtual (digital) domains, even if the use of digital tools for personal and social interactions for increasing links to the real world remain unchanged. People of all ages still need contact with nature (Louv 2005) and with other people, in order to develop different life skills, values, and attitudes, to be healthy, satisfied with their lives and environmentally responsible. Recent research into biophilic design, restorative environments, nature deficit syndrome, and technobiophilia demonstrates that a green environment is essential to well-being in both analogue and digital surroundings (Thomas 2013).

3.2 Communication and activities

A relevant aspect of ICT is their ability to enhance communication with (potential) users and allow creative participation and community formation. ICT can be a useful tool for scenario simulations to enhance the attractiveness and responsiveness of the public spaces. Users can share information, expose their opinions, needs and desires. GPS and other GIS supported devices can greatly inform about usage-spatial relationships. These pose a challenge for spatial planners to respond creatively and holistically. ICT in public spaces may also bring threats that should be taken into account like electronic aggression – as above mentioned, from the users' view in regard to their needs as well as from the designer's open research opportunities for meeting the social needs and public preferences. A high number of projects, activities and initiatives take up aspects of interaction among users, ICT and social behaviour (e.g. MobileCity, Cyberbullying, ISTME), others set up on ICT for spatial analyses, planning methodologies and public involvement (Click Your Way, Behaviour Mapping, People Friendly Cities), as well a series of urban games. Although ICT relies on interactions among users, very little is known about ICT-users related to public open spaces. Interventions of digital media are supposed to change the perception of today and future public space role, design and usage. In fact, what those changes mean for public spaces' character and design we are unknown yet. For the moment the interactions of ICT and public spaces can be seen in three different ways For each one some examples are given and discussed.

- The use of ICT devices in public spaces (phoning, texting, wi-fi, gaming);
- The ICT as information transport media (internet, newsletter);
- ICT as a tool for social reporting and planning (e-planning) - this includes the possibilities the ICT offer for connecting people on urban issues (e.g. for enhancing participatory processes).

4 EXAMPLES

There are different examples of blended digital/public open spaces, e.g. digital displays in cities, wi-fi provision in parks and squares, on-the-spot tourist information, broadcasting and interactive art performances, urban games, etc. This list is not intended to be comprehensive, but it does attempt to make sense of an enormous body of ideas and research that bear on the topics of urban ecology, sustainable development and the effects of digital devices on them. At present, these are novel, uncommon and diverse, but they are increasing. Even if they are not goal-oriented towards urban spaces, they influence the perception and use of such spaces, adding new dimensions to their planning and design, e.g. new street furniture and park elements.

4.1 The use of ICT devices in public spaces: The WLAN in Public Spaces

The explosion of the Internet and the wireless access thereto has created incredible demands for connectivity. In this context, mobile communication devices are important because they enable users to access the internet outdoors. Until now internet is accessed mainly from home and work place, but following semi-public spaces as train stations, airports, hotels, etc., the wireless local area networks are also reaching streets, squares and parks enabling laptops, smartphones or tablets to get connected to the internet. The list of cities that already offer basic Wi-Fi service in hotspots located in public places is steadily growing; and includes world-cities as London, New York and Paris (fig. 1, fig.2).

Meanwhile, several websites support the finding of Wi-Fi access points (or hotspots). Such information is also already standard in online travel guides. Initially, and in many places Wi-Fi service has been installed and operated in public spaces by telecommunications operators, but is increasingly taken over by local governments. Thus, the availability of this technology and its access, partly free of charge, in public spaces can be seen as a social service provided by the council. This can be of relevance especially for those who cannot afford a private high-speed service.



Figure 1. The city of Santos (Brazil) offers a free Wi-Fi access on different public spaces, even on the beach promenade. Maybe such indication signs could replace those of "Keep off the grass". (Smaniotto, 2013). Figure 2 For the European Football Championship 2012 the host cities in Poland started offering several hotspots free internet access in public spaces. Signs indicate the coverage areas, like here in the city of Poznan. (Smaniotto, 2013). Figure 3: The North Park in Ljubljana (Slovenia), opened in 2009, was designed by IN.KA.BI office under the motto "Associated Books of the World". Here multimedia portals offer reading on screens and listening of classics of world literature in their original languages. A USB port also allows the broadcasting of own music - what is an attraction for teens. A proposed Internet access has not been implemented yet. (IN.KA.BI, 2010).

Wi-Fi services in public places can be a feature to attract different and more users to sites leading to a greater use of these spaces. Bringing more people outdoors can make public spaces more alive, deserted places can be revived. More people improve also the safety of these places and can mean diversity, thus contributing to reduce social inequalities and to increase cohesion and tolerance. Since participating in real and virtual spaces can contribute to the public discourse, which in turn can stimulate political action and develop more democracy. At the same time perhaps none of these will happen, as internet and ICT may prevent existing public life making private activities in public spaces shrink or diminish. The availability of Wi-Fi hotspots does not mean necessarily the access to information is greater or the dissemination and diversity of ideas increase (Hampton *et. al.*, 2009).

Wi-Fi reaching public spaces is already challenging designers and landscape architects to meet the needs of people living in an increasingly connected world. The Wi-Fi hotspots do not require only new signs to inform their existences (as Figure shows) but for making the use of ICT and mobile devices outdoors more comfortable already new street furniture is being designed. This new furniture could have further influence on the urban landscape. In Paris, six different kinds of intelligent street furniture are being already tested. This includes the *Digital Harbour*, a kind of open kiosk with a plant-covered roof, equipped with swivel seats and tablespots designed for

laptop computers. It offers free Wi-Fi connection and recharging points for electronic devices. In Belgrade, users of the Tašmajdan Park can recharge the batteries of mobile phones, tablets, and multimedia devices with solar energy. Solar powered benches are planned to be installed in Boston offering similar services (fig.3).

The ICT as information transport media: The Real City Virtual

As Cerveny (2009) points out the modern city is built not just upon physical and social infrastructures, but also upon patterns and flows of information that are always growing and transforming. Real cities can be found in the virtual world in different ways. In the internet a series of online maps, satellite radar images, photo archives, panoramic views of streets and buildings, both institutional and private, of the most diverse cities is available. This not only facilitates the access to information, but it also permits new readings of the city and helps citizens and planners to get a better grasp of reality. To the contemporary information culture belongs already browser based active maps with geographical information systems (GIS) on the internet (WebGIS).

Web portals offer another way to meet the real cities in cyberspace. Besides maps and images service it is possible to undertake virtual tours through distant real landscapes and cities, panoramic views of streets and buildings. Increasingly the panoramic views of streets are offered from a viewer's eye position and not only from the bird's eye view, this allows users to go on virtual walking tours through different cities and landscapes without leaving the physical environment. One of the best-known portals, the Google Street View on Google Maps is increasingly offering virtual tours through green spaces, as through the Hyde Park in London or High Line Park in New York.

Through the virtual tours people can get information, view, admire, and partly even experience places that otherwise would not be possible. The possible benefits are many, from becoming familiar with a place before an actual visit happens, to a deeper knowledge and widening awareness. These virtual tours are far from being only imaginary trips to exotic places. Often they meet practical objectives such as a preview of a real destination, or navigating to it using an app on a mobile device.

4.2 ICT as a tool for social reporting: New Media, Social Interrelations and Public Spaces

ICTs also encompass a social component as they provoke changes in people's lifestyles, the way they relate and communicate to each other. The social media and the so-called social network enable people having conversations online. These conversations can take a variety of forms, for example, chatting, blogging, or sharing photos. The social media is increasingly affecting all areas, from individuals to society, economy, and politics.

Even if the use of digital tools for personal and social interactions is increasing, building links to the real world remain unchanged. One example can be seen in the feature called *Places* offered by Facebook, one of the most successful social networks. An analysis made by Facebook based on the meeting places of its users' across 25 cities around the world revealed their most *social landmarks*. In six of these cities, public spaces (squares, parks, gardens, and streets) are the most popular venues for meetings, e.g. the Kurfürstendamm in Berlin or Times Square in New York. This study brought the confirmation that the climate also plays a role in the lives of internet users. In cities with warm weather, meetings take place outdoors, as in the Ibirapuera Park in São Paulo, and in colder cities people tend to meet more indoors, in bars and clubs, like in Moscow. Social media represents powerful tool for collective action, as it allows communication, coordination, and information sharing at very low costs and with an incredible speed. These features help to mobilise masses and emit callouts to meet at a certain place to demonstrate or protest. In Brussels, for example, a group claiming for car-free spaces, as well as more and better public spaces in the Belgian capital uses Facebook to mobilise people to participate in the picnics held on city streets.

The actions that need public attention, such as demonstrations, strikes, sport events, or even carnivals, require precisely the prominence that public spaces can offer. These events require the immediacy of a live acting or the impact of the kinetic energy of a mass in motion. The Tahrir Square in Cairo, the Taksim Square in Istanbul became worldwide known in this context. The revolutionary movements of the so-called Arab Spring revolutions of early 2011 calling for more democracy and regime change were fostered by the use of modern means of communication. Internet, social media, blogs, twitter, etc. were important drivers (Storck, 2011) allowing a fast dissemination of information, ideas and even live and unofficial images of conflict areas. Public spaces being indeed used in an "unconventional" manner with protesters and tents creates a powerful medial image, as figure 4 shows. These "occupations" in fact evidence public spaces as democratic places able to encourage appropriation in accordance to the users' needs and aspirations. This appropriation embodies, at its core, the central idea of publicness. These examples, in the author's opinion, clearly show that the public spaces do not become obsolete, but anchored in ICT reaffirm their role as a democratic space in the contemporary connected metropolis.



Figure 4: After demonstrating in the bank district of Frankfurt the Occupy Movement, which fights against social and economic inequality, occupies in summer 2012 the lawns Friedrich Square in city of Kassel (Germany) during Documenta 13, one of the most important contemporary art exhibitions in the world (Smaniotta, 2013).

5 CONCLUSIONS

Improving the quality of the urban environment is an endless task. There is no sustainable city or creative economy, if there are no healthy and liveable urban spaces. In a sustainable city, the adjective "public" should not be only an appendix, but a quality and a request to appreciate and recognise public spaces as places for individual and collective expression. Ensuring the network of public spaces can provide a variety of benefits and opportunities for social interaction should be a programme and council policy, and regard aspects as safety, accessibility, quality, and design of these spaces. This calls not only for skilled professionals (i.e. landscape architects, urban designers) able to accept the challenge to draw up convincing ideas and inclusive spaces, but also politicians to prioritise the inclusion of quality public spaces in the urban agenda. The challenge is how to make use of ICT to make urban open spaces even more public and inclusive and to attract more people to live a healthier way of life. As none "is willing to give up the use of machines" (Thomas, 2013), the question is how to integrate these in a healthier life style. The quality of public spaces plays here a decisive role, since nobody will expend leisure time outdoors if the environment is not attractive, accessible, and safe. Many people today support the notion that every person, especially young people, has a right to access the internet, but considering Louv's (2005) maxim: The more high-tech our lives become, the more nature we need, we should also call for right to access the nature in a healthy urban environment. New technologies will probably induce the creation of public spaces 2.0 then even the increasingly virtual world will not waive the real architecture but with spaces that challenge convention propel the cultural narrative. As Thomas (2013) says, CyberParks will be intelligent spaces embedded with sensors and computers. The central challenge remains how to use digital technologies to transform our cities into interactive landscapes and urban places, encouraging involvement and better social environments, supporting sustainability, responsibility, and knowledge about nature, people, and the city.

REFERENCES

- Bannwart, E. 1996. Virtuelle Räume und reale Erfahrung. *Telepolis*. www.heise.de/tp/druck/ob/artikel/6/6026/1.html . 24/07/2012.
- Berman, M. G., Jonides, J., & Kaplan, S. 2008. The cognitive benefits of interacting with nature. *Psychological Science*, 19(12), 1207–1212. doi:10.1111/j.1467-9280.2008.02225.x
- Carmona, M., Magalhães, C., Hammond, L. 2008. *Public space: the management dimension*. London: Routledge.
- Cervený, B. 2009. Civic Information System. <http://www.vurb.eu/2009/07/29/city-modeling> . Accessed 15/01/2013.
- COST- European Cooperation in Science and Technology. 2013. Action TU 1306. http://www.cost.eu/domains_actions/tud/Actions/TU1306 July, 2014.
- De Chant, T. 2012. Urban trees reveal income inequality. <http://persquaremile.com/>. Accessed 10/08/2012.
- Enjolras B., Steen-Johnsen, K., Wollebæk, D. 2103. How do social media change the conditions for civic and political mobilization?. <http://www.academia.edu/1353639> Accessed 24/ 04/2013.
- Fetchenhauer, D. und Belschak, F. 2009. Cyberbullying in Chatrooms- Who are the victims? In *Journal of Media Psychology*.
- Firmino, R. J., Duarte, F. & Moreira, T. 2008. Pervasive Technologies and Urban Planning in the Augmented City. In *Journal of Urban Technology*, 15 (2): 77-93.
- Gehl, J. 1987. *Life Between Buildings: Using Public Space*. New York: Van Nostrand Reinhold
- Goheen, P. G. 1998. Public space and the geography of the modern city. *Progress in Human Geography* 22 4.: 479-496
- Graham, S. Ed. 2004. *The Cybercities Reader*. London: Routledge.
- Graham, S.; Auguri, A. 2007. Virtual Cities, Social Polarisation and the Crisis in Urban Public Space. In *Journal of Urban Technology*
- Habermas, J. 1990. *Strukturwandel der Öffentlichkeit*. Frankfurt am Main: Suhrkamp.
- Hampton, K.; Livio, O.; Sessions, L. 2009. The Social Life of Wireless Urban Spaces - Internet Use, Social Networks, and the Public Realm. In *Journal of Communication*, 60 (4): 701–722. DOI: 10.1111/j.1460-2466.2010.01510.x.
- Hampton, K. and Gupta, N. 2008. Community and Social Interaction in the Wireless City: Wi-Fi use in Public and Semi-Public Spaces. In *New Media & Society*, 106.
- Horrigan, J.; Rainie, L. 2012. When Facing a Tough Decision, 60 Million Americans Now Seek the Internet's Help. Pew Research Center Publications, <http://pewresearch.org> . Accessed 22/07/2012.
- Katzer, C. 2011. *Das Internet als Tatort: Cyberbullying und sexuelle Gewalt- Wer sind die Täter, wer wird zu Opfern?* Hannover: Landesstelle Jugendschutz Niedersachsen .
- Katzer, C. 2007. *Gefahr aus dem Netz- Der Internet-Chatroom als neuer Tatort für Bullying und sexuelle Viktimisierung von Kindern und Jugendlichen*. Dissertation. Köln: Universität Köln.
- Larsen, T. K. 2003. ICT in urban planning. www.plan.auc.dk/~torben . Accessed 05/05/2013.
- Louv, R. 2005. *Last Child in the Woods: Saving Our Children from Nature-Deficit Disorder*. Algonquin: Books of Chapel Hill
- Meyrowitz, J. 1985. *No Sense of Place: The Impact of Electronic Media on Social Behavior*. New York: Kindle Edition.
- Parkinson, J. 2008. Symbolic representation in public space: capital cities, presence and memory. <http://www.johnrparkinson.net/>
- PPS - Project for Public Spaces, Inc. 2012. *Placemaking and the Future of Cities*. <http://www.pps.org>. Accessed on 22/04/2014.
- Rawlinson, C.; Guaralda, M. 2012. Chaos and creativity of play: designing emotional engagement in public spaces. In Brassett, J. et al (Eds). *Design and Emotion Conference. Out of control: Proceedings of 8th International 1-12*. London: University of the Arts London
- Smaniotto Costa, C., Hoyer, J. 2014. Why invest in Urban Landscapes? Impacts of European Research on Paradigm Shift in Urban Planning. Focus, In *Journal of the City and Regional Planning Department*, San Luis Obispo
- Smaniotto Costa, C. 2014. Can we change processes in our cities? Reflections on the role of urban mobility in strengthening sustainable green infrastructures. In *Journal of Traffic and Logistics Engineering*, 2, 2 141-155.
- Smaniotto Costa, C., Menezes, M., Mateus, D. 2014 How would tourists use Green Spaces? Case Studies in Lisbon. In *Project CyberParks*. Lisboa: Entretextos.
- Smaniotto Costa, C., & Schmitz, R. M. 2013. As modernas tecnologias de informação e comunicação e o espaço público Explorando as fronteiras de uma nova relação. In *Revista de Geografia E Ordenamento Do Território*, (3): 197–229.
- Smaniotto Costa, C. 2012. *Kommunikationstechnik im öffentlichen Raum - Beispiele für neue Interaktionen*. In *Stadt und Grün*
- Smaniotto Costa, C.; Steinmeier, G. 2012. 'A caça ao tesouro ao ar livre. Geocaching, uma oportunidade de lazer em espaços verdes'. São Paulo: Arqutextos www.vitruvius.com.br/revistas/read/arqutextos/12.143/4332 Accessed on 07/04/2014.
- Souza e Silva, A. 2006. From cyber to hybrid: mobile technologies as interfaces of hybrid spaces. In *Space & Culture*, 9 (3): 261-278.
- Storck, M. 2011. 'The Role of Social Media in Political Mobilisation: a Case Study of the January 2011 Egyptian Uprising'. <http://de.scribd.com/doc/132230246> . Accessed 22/04/2014.
- Šuklje Erjavec, I. 2010. Designing an urban park as a contemporary user-friendly place. In Golicnik Marušić, B. & Nikšič, M. (Eds). *Human Cities - Celebrating Public Space*: 39-51. Oostkamp: Stichting Kunstboek.
- Thomas, S. 2013. *Technobiophilia: Nature and Cyberspace*. London: Bloomsbury
- Varna, G. and Tiesdell, S. 2010. Assessing the Publicness of Public Space: The Star Model of Publicness. In *Journal of Urban Design*
- Thompson, C. W. & Travlou, P. (Eds) 2007. *Open Space: People Space*. Abingdon: Routledge.