

Scientific Report

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| Reference | CyberParks ECOST-STSM-TU1306- 23041 | | | |
| Name | Tiago António Leal Duarte | | | |
| Home institution | Universidade Lusófona de Humanidades e Tecnologias | | | |
| STSM Topic | THE IMPORTANCE OF NEW TECHNOLOGIES IN THE STUDY OF PUBLIC SPACES | | | |
| Period | from | 19-11-2014 | to | 28-11-2014 |
| Host institution | Universitat Autònoma de Barcelona. Department of Geography, Barcelona (ES) - Dr. Montserrat Pallares-Barbera | | | |

1. Abstract

The use of new technologies is becoming a reality. It is already possible to find public places with free internet access, often functioning as attractive for tourists. In the very near future, probably these same technologies will be the basis for decision-making in urban planning. One of the principles of the "New Charter of Athens 2003" [1], revised by European Council of Town Planners on 20 November 2003 in Lisbon, refers specifically to the use of new information and communication technologies (ICT) to provide a variety of systems of transportation of persons and materials, and information flows. The possibility of having a tool that gives us indications as a public space is used for verifying the conditions and characteristics, and how they should be modified according to the needs of its users.

The objective of this STSM was, through the use of the application (app) WAY CyberParks, analyze the collected data, verify its contents and draw conclusions about the abilities of this app & web as a tool for verifying the usage patterns related practices / paths conducted in public spaces, and analyze the relevance of the use of the instrument and the use of ICT to improve and streamline the planning and management of public spaces. Were analyzed the data collected in the case studies in Barcelona, Carrer d'Enric Granados and Fòrum de Les Cultures (Universal Forum of Cultures), nowadays called Parc del Fòrum (Forum Park). The first, located in the center of Barcelona, is a consolidated space that was transformed to a more pedestrian use by the time of Olympic Games in 1992. The Forum it is a space created for an event in 2004, as the name implies, and is located on the outskirts of Barcelona, near the sea.

WAY CyberParks app gives us information about the routes of each user in the previously selected areas. Additionally, it allows to be use online (need internet connection) or offline mode, have possibility of launching issues to users, send suggestions about the app or/and the selected places, and use augmented reality to verify points of interest. It is expected that by using this application, can be determined what are the strengths and weaknesses of a public space.

During the stay were performed various analyzes the two selected areas in order to test the application. The investigation has shown that data collected with the app allow us to understand how the selected public spaces are used (routes, most used areas, etc.). The questionnaires launched by application, one of his last improvements, allow see what kind of users and what your opinion of a public space, serving as support for their improvement. Through the work we intended to find answers to two questions that are considered essential in CyberParks Project:

- How important is the use of new technologies in the study of public spaces?
- How relevant is the app in the analysis of these public spaces?

The use of new technologies is important in the study of public spaces, to quickly in an effective way, get results on the opinions of users, and how they use public spaces. In other words, you can have one of the main objectives of urban planning: the opinion of users.

On the other hand, WAY CyberParks app, which is still in its testing phases, has the necessary conditions to provide support for the analysis, management and planning of public space, and may have an important role to support planners.

2. Purpose of the STSM

The main objectives of this work are:

- Through the use of the application (app) WAY CyberParks, analyze the collected data, verify its contents and draw conclusions about the abilities of this app & web as a tool for verifying the usage patterns related practices / paths conducted in public spaces;
- Analyze the relevance of the use of the instrument and the use of ICT to improve and streamline the planning and management of public spaces;

In the analysis of studies cases, will answered the research questions, namely:

- How do we understand the hidden demand of people visiting public spaces?
- How do we catch the unsatisfied demand of people visiting public spaces?
- Do we want to have compiled suggestions of what people would like a place to be?
- How do we know what is more attractive for visitors in an urban open space?
- How do we catch the perception of people visiting a public space?

Analysis was done through field visits, allowing observations of their characteristics and the type of users. The WAY CyberParks app was also tested in the field visits, in order to understand the potential of the app. Finally, was made an analysis of data collected using the website.

The analysis aims to find answers to two questions that are considered essential in research:

- ✓ How important is the use of new technologies in the study of public spaces?
- ✓ How relevant is the app on the analysis of these public spaces?

3. Description of the work carried out during the STSM

During the stay, as mentioned above were analyzed two case studies selected by the Barcelona team, which were used during the Meeting 26-28.11.14.

The analysis of these two places, particularly as to their characteristics and functioning of the app, were the basis of the work done during the stay.

Thus, over the 10 days, and according to work plan agreed with Dr. Montserrat, we can divide the work in the following steps:

1. Internet research and literature review related to the selected study sites;
2. Field Analysis on the selected locations;
3. Test and review the WAY CyberParks app, with the latest modifications;
4. Providing the necessary support to the local team of UAB during the Meeting 26-28.11.14, in particular in the study visits to selected places.

The different steps allowed finding some answers to the issues raised in the proposal research. Due to the short duration, and the few samples obtained, we cannot speak of a full analysis, although it may give an idea of how these spaces work and how the application may or may not be useful in the analysis of these spaces. Thus we can speak of an introductory analysis that needs to be more comprehensive in order to verify the usefulness of the study of these sites.

Carrer d'Enric Granados

The first selected location was the Carrer d'Enric Granados, a street in the center of Barcelona. This street has unique characteristics as a result of its transformation by the time the Olympic Games of 1992.

It was a street that was a natural division of the city. The right side (direction Northeast) had more expensive homes and was directed to a higher class (ex. Passeig Garcia). The left side (south-west direction) had more houses for the working class. The main objective of the transformation of the space was to improve pedestrian use and for the use of bicycles.

Parallel to the transformation of public space, places of attraction in existing buildings were created, a good example being the present art galleries. Even the cafes and restaurants are directed to an audience that wants a more peaceful and without the clutter of other areas of the city (eg. Ramblas), and which includes the residents. [2]



Carrer d'Enric Granados
(Photo: Tiago Duarte)

The interestingly in the street is that there is no ban on motor traffic, but with only one lane for cars, motorists avoid using it because they lose more time.

This transformation allowed the street to have unique characteristics in Barcelona, such as noise levels that are lower than in nearby streets.

The feeling you have when you are on this street is that it is unlike anything

we could find in the city of Barcelona. The reduced traffic flow, with result in lower levels of noise and other pollution levels, allows one to walk around and enjoy existing facilities such as rest areas, restaurants and other commercial spaces. The space invites to their use. Note that the level of tourist attraction, the Carrer d'Enric Granados has a special highlight, inviting tourists to enjoy its art galleries, so it is very common to see, in addition to residents, many tourists wandering through space. [3]

Observations / field trips made on site during our stay showed that it is an area of the uniform use throughout the week, with a focus in the late afternoon, where you can watch the locals walking with children and / or animals, for example.

Fòrum de Les Cultures

The other site studied was the Fòrum de Les Cultures (Universal Forum of Cultures), a recent space located by the sea and close to the Olympic Village 1992. The Universal Forum of Cultures was held in 2004, organized by the city of Barcelona, the regional government (Generalitat de Catalunya), the Spanish government and UNESCO.

This place was characterized by old factories and old houses that were demolished to make way for this new function in 2004. One of the objectives of the transformation of this space was to connect this part of the city to the sea. Another idea in this area was also to modify the type of existing buildings, which were to a lower class, and currently are directed for a medium / high class. [4]



Fòrum de Les Cultures – At weekend
(Photo: Tiago Duarte)

This space is also used for major events such as concerts. My site visits confirmed that it is mostly used at the weekend, when can be observed people doing exercises, more young people making extreme sports or just people walking .

Moreover, during the week we have a nearly deserted place with a very small flux of people. Although reasons for these fluctuations can have many natures, certainly cannot be separated from their geographical location (outskirts of the city), as well as their characteristics, since it is a space that

The Forum of Cultures was an opportunity found to improve the space with best conditions, reshaping this part of town. The transformation of the space gave rise to the so-called Forum

Park (Parc Del Fòrum). In this space we can find some equipment, such as the museum Blau (museum of natural sciences), an Auditorium and a Radical Park directed to the young people. This

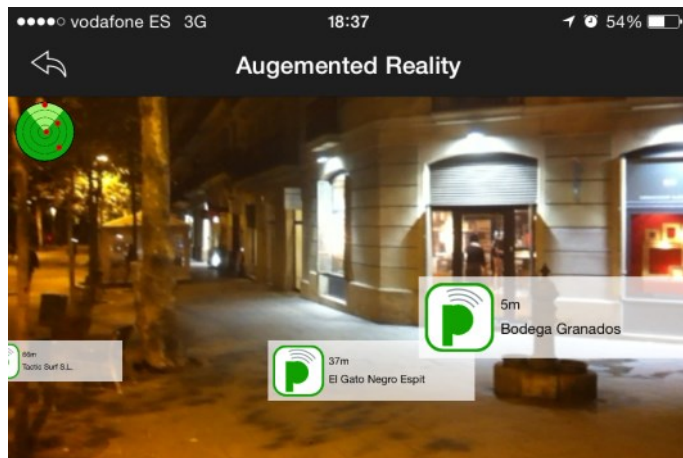


Fòrum de Les Cultures – During week
(Photo: Tiago Duarte)

invites large groups, and not an individual use. The feeling you get when you're in the Forum, is that it is a cold and uninviting space to stay, at least not as an individual user.

WAY CyberParks app

Beyond the field observations, the analysis of case studies in Barcelona was made using WAY CyberParks app, which is being developed by Alfonso Martinez of Bahillo Univ. of Deusto (Bilbao).



Screenshot WAY CyberParks app using augmented reality (Source: Tiago Duarte)

The WAY CyberParks app tests also helped to verifying the new features, which in its new version now has offline mode, augmented reality, and with the possibility of launching issues to users of selected public spaces during their stay. This version also provides the possibility to send suggestions about the app or/and the selected places.

The aim of these new features is to get quantity and quality results with more significance, so in this way this app can be used on a large scale analysis of public spaces by researchers or town planners, public space designers.

In the two case studies areas several tests of the app were made, which it was sought to understand how a user might or might not be satisfied with it. The main function of the app remains the same, that is, check how people use a public space. If we already have the possibility to check the routes of users in selected public areas, with these new features, we have access to the views of users, through the questions that are being released during the stay.

The following are the questions that were asked at specific locations on each the sites, which had several options to response:

- ✓ What is your purpose of visiting this place?
- ✓ How often do you use this space?
- ✓ What do you think about vegetation?
- ✓ What would you like to have here? (a specific waypoint)
- ✓ Would you like to live in this place?

- ✓ What is the element that surprised you the most from this open urban space?
- ✓ Is traffic and traffic noise bothering you?

These issues are quite simple in order to allow a rapid response, to understand how the different users feel the space, and what they would like to see changed.

4. Description of the main results obtained

Although the results are based on a small number of WAY CyberParks app users, and because what we want at this stage is to check the type of data we may collect, and if these are enough to support the planning and management of a public space, the following conclusions can be drawn:

- ✓ The data collected with the app allow us to understand how the selected public spaces are used (routes, most used areas, etc.);
- ✓ The questions asked by the app allow to understand what kind of people use the selected areas, and what is your opinion of this space;
- ✓ However, it should be assessed whether the questions can be different depending on the selected places;
- ✓ Augmented reality it is an attractive so to achieve a greater number of users of the application. However, their usability conditions (access speed) should be improved in future versions.

And answering two important questions launched at the beginning of this report, it is concluded that the use of new technologies is important in the study of public spaces, they allow quickly in an effective way get results on the opinions of users, and how they use public spaces. In other words, it is possible to fulfill one of the main objectives of urban planning: the opinion of users.

On the other hand, WAY CyberParks app, which is still in its testing phases, has the necessary conditions to provide support for the analysis, management and planning of public space, and can aspire to have a significant role for supporting planners.

5. Follow-ups

- Continuation of work begun in Barcelona, in collaboration with the host institution of the STSM, to allow further analysis of the use and the results obtained by WAY CyberParks app;

- Since my doctoral thesis addresses similar STSM issues, in light of the results, there is the possibility of including one of the case studies of Barcelona in it;
- Presentation and discussion of the results in one (or more) of the information channels of the CyberParks Project;
- Continue collaboration started in Barcelona with the WAY CyberParks app developers to help improve and optimize the same;
- Use WAY CyberParks app on my doctoral thesis under the doctorate programme in Urbanism at Universidade Lusófona de Humanidades e Tecnologias, Lisbon.

6. Personnel Benefit and mutual benefits for the Home and Host institutions:

In a work of this nature, we can talk about numerous benefits to all parties involved. First, on a personal level the opportunity given to me to make this STSM allowed deepened my knowledge in an area I'm writing my doctoral thesis.

The benefits of this work are extended to home and host institutions, and Cyberparks Project. First, with analyzes to be produced, as this report contains only a brief summary.

For the host institution is intended that the work produced can be a help in the analysis made to the two selected case studies, and at the same time help myself to be able to use one of the case studies in my doctoral thesis, which also have benefits to my home institution.

The great personal benefit that one can draw from this STSM is that the results obtained can be considered an important result for the current research in the CyberParks Project.

7. Other comments

I would take this point to make a few comments regarding my experience in Barcelona, particularly as regards the functioning of the STSM.

In general, the preparation for the STSM I did not have major problems and I always got the necessary support by MC Chair Dr Carlos Costa Smaniotto, STSM coordinator Gabriela Maksymiuk, and Host Institution Dr. Montserrat Pallares-Barbera.

I would like to highlight the support provided by the host institution, Dr. Montserrat and all the geography department staff. The possibility of participating in the meeting of CyberParks was very important because it allowed me to monitor the work and participate in discussions with other participants in person.

Being my start in the area of research, this experience was very enriching from a personal point of view.

8. References

[1] European Council of Town Planners (2003), "*The New Charter of Athens 2003 - The European Council of Town Planners' Vision for Cities in the 21st century*", Lisbon, 20 November 2003;

[2] The Illustrated Adventures (2013, October 23). Enric Grandos, sent to <http://www.katcameronillustration.com/2013/10/23/enric-granados/>. (Visited on 19.11.2014)

[3] Barcelona Connect (2014, October 21). Enric Granados: A Special Street in Barcelona sent to <http://www.barcelonaconnect.com/enric-granados/> (Visited on 19.11.2014)

[4] Ajuntament de Barcelona - Institut Cerdà (2005) "*Barcelona Fòrum 2004, a new city model, the sustainability in the renewal urban project of Besòs Waterfront*", Barcelona.