Annual report 2016

SmarterLabs

Improving Anticipation and Social Inclusion in Living Labs for Smart City Governance

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Project goals

The project aims at developing a Living Lab approach to deal with two major risks to successful implementation of smart transport technologies: unforeseen barriers to large-scale change of socio-technical systems and exclusion of social groups not matching the required 'smart citizen' profile.

Retrospective analyses and action research in Living Lab experiments will be performed in Bellinzona, Brussels, Graz and Maastricht.

(Goals did not change respect to the original project description)

Summary

The 'Smart City Living Lab' is an emerging approach in European cities. It brings together citizens, policymakers, businesses, and researchers to test smart, ICT-based solutions to urban problems in real-life contexts. However, solutions that 'work' in the particular reality of a Living Lab may not be adopted at a large scale. Urban infrastructure is interwoven with the daily lives of citizens and therefore difficult to change, and large groups may not even have access to ICT-based solutions.

The SmarterLabs project develops a novel approach that anticipate major risks of a smart technology innovation (resistance to change, exclusion of social groups) and performs action research in Living Lab activities in four cities: Bellinzona, Brussels, Graz and Maastricht. By explicitly addressing anticipated barriers and incorporating groups at risk of exclusion in the Living Lab experiment, the chances of successful uptake of the end result are enhanced.

Large-scale adoption of smart, low-carbon transport and mobility technologies will result in reduced fossil energy use and reduced emissions of greenhouse gases. In addition, improved social inclusion will be of particular value to the citizens and NGOs representing citizen interests, as the novel approach explicitly aims to involve citizens not matching the usual 'smart citizen' profile as participants in Living Lab experiments, allowing them to influence the innovation process.

For all European cities with Smart City initiatives, the projects delivers generic implementation guidelines for Smart City Living Labs on how to address barriers to upscaling that may stem from resistance to large-scale change in socio-technical systems and from people being excluded (in direct or indirect way). By giving special attention to anticipation of possible resistance and social exclusion in the form of Living Labs, the results of Smart City initiatives (now and in the future) are expected to become better scalable and more robust in terms of value creation for a wide range of stakeholders.

Work undertaken and findings obtained

Activities have been performed according to the SmarterLabs work programme presented in the ENSCC full proposals.

The official start of the project in the European consortium was set to March, 20 2016. Two general project meetings were held and a third one is already scheduled for 2017:

- kick-off meeting: Brussels, June 2-3 2016;
- general project meeting: Graz, October, 19-21 2016;
- general project meeting: Bellinzona, March 29-31 2017.

Actually, the first project meeting was scheduled earlier, for March, 23-24 2016. It had to be postponed, however, due to the terrorist attack in Brussels happened the day before. From the practical point of view, this produced some delays in the start of research activities scheduled for WP2 and WP3 (which are strongly dependant on international cooperation), favouring instead development of activities for WP4 (where each country is free to design activities in the local living lab). This implied therefore a slight

modification in progress of single WP activities, without however affecting in a substantial way the general project progress, especially from the point of view of the start of the living lab activities.

Activities performed in 2016 can be summarized as indicated in the following sub-sections.

WP2 "Literature review and Research methodology project"

A comprehensive literature review was performed by all the research partners in order to identify the current understanding of the key buzzwords around the SmarterLabs project (smart cities, living lab, smart mobility) and to explain the key theoretical frameworks which will guide action research activity in the four living labs. Based on this, specific intervention methodologies were developed for each living lab case study.

According to the ENSCC work programme, outcomes of such activities were supposed to be presented in two separate deliverables (*D2.1 Report on research methodology WP2*, expected at month 4, and *D2.2 Report on literature review WP2*, expected at month 6). However, project partners preferred to combine the two deliverables, into one single document, since research methodology and literature review are closely related.

Contributions to such a deliverable were elaborated by the four academic partners, under guidance by the Vrije Universiteit Brussel, WP2 leader. The document was entirely designed, built and revised thanks to the contribution of all the academic partners, according to a participatory approach: each academic partner was responsible to draft specific sections, however the whole deliverable was cross-commented by all the partners. Specific sections developed by SUPSI are:

- Section 2.1 Key concepts and buzzwords - *Smart and smartness*;
- Section 2.3 Key concepts and buzzwords - *Smart mobility and urban systems*;
- Section 3.1 Analytic and theoretical approach - *Behaviour change: towards a smart urban mobility*;
- Section 4.1 Smart Methodologies - *The GoEco!, Bellinzona living lab*.

WP3 "Retrospective analysis on urban mobility governance"

As mentioned above, activities within such WP were slightly delayed and the related Deliverable "*D3.1 Report on retrospective analysis urban mobility governance WP3*, expected at month 9, has not been completed yet.

Elaboration of the deliverable is performed under responsibility of the University of Graz (WP3 leader); also for such a document, however, the academic partners shared from the beginning structure and contents. For the time being, the general structure of the document is available. Each academic partner is now developing the related analyses, focusing on a number of local past experiences selected with the aim of providing learning elements to be directly incorporated in Living lab activities. Discussion on an advanced draft version of such a deliverable will take place during the third project meeting to be held in Bellinzona, with the aim of performing a cross analysis of retrospective analyses between the case studies. The final version of the report will in fact be made available by the end of month 12, when, according to the ENSCC proposal, WP3 activities are expected to conclude.

Such an updated work-programme implies that Milestone 1 indicated in the SFOE-SUPSI contract (*Report on retrospective analysis on urban mobility governance*) cannot be fully met by the end of November 2016. However, WP3 activities are now at an advanced stage and delay with them was compensated by more progress than originally expected in WP4.

Ongoing analyses for WP3 are considering primary and secondary sources; also, interviews with the key actors involved in each case under analysis are being performed. For Bellinzona, the case studies selected for retrospective analysis are the following ones:

- *Agglomeration plan for the Bellinzona area (PAB2 and PAB3):* analysis of the governance processes behind the elaboration of the Plan for the Bellinzona urban agglomeration. The analysis considers the two versions of such agglomeration plans, elaborated for Bellinzona since 2011. Special insight will be dedicated to analysing the evolution of the urban bike-sharing system, initially proposed by PAB, and then replaced by a radically different measure aimed at offering citizens long-term bicycle rental facilities.

- *Mobility plans for schools*: an example of a successful bottom-up local process to stimulate individual behaviour change; replication of such an approach to other geographic contexts and different scales encountered however some barriers, which need to be investigated;

- *Transformation of the Prato Carasso area*: an example of failure of Municipal plan for a large-scale urban transformation, mainly due to the lack of proper involvement of the key actors and interests among the population.

WP4 "Action research in smart Living Lab experiments"

Activities in WP4 are being developed under responsibility of the University of Maastricht. In this WP, however, project partners have more room to move independently, in order to follow and support specific needs of the living lab activities developed by each City partner.

Unifying elements lye in the type of problems that will be taken into account (barriers to inclusion, difficulties in up-scaling and other specific barriers related to each case study, as emerged from literature review and retrospective analysis), while specific case studies face quite different urban and mobility transformation processes.

Building on the outcome of the WP2 and WP3 analyses, a methodology to develop the Bellinzona case study has already been developed, together with the related time schedule. All the Swiss partners, including non-academic ones (City of Bellinzona and Provelo Ticino), had an active role in defining such a methodology and contributed to fine-tuning themes and contents of the Bellinzona living lab.

Focus of the living lab was slightly modified respect to the ideas presented in the ENSCC project proposal, and larger importance has been attributed to the process of co-design and co-development of the persuasive smartphone app that is the focus of the living lab in Bellinzona.

Analysis of literature on living lab experiments highlighted in fact the importance of co-design and learning elements as success factors to reduce barriers to later large-scale adoption at the municipal level, after conclusion of the living lab (first upscaling level).

Also, literature review and direct experience in the ongoing *GoEco!* project highlighted difficulty to keep app users engagement over a long period of time, especially when only intrinsic motivation factors are exploited. For this reason, instead of using living lab as a large scale test-bed for two different persuasive apps (the first one, already existing, exploiting intrinsic motivational factors and the second one, to be developed, exploiting extrinsic motivational factors) and to compare their relative effectiveness in stimulating behaviour change, we decided to move focus of the living lab around building of a new app itself. Participants to the living lab will in any case test the existing *GoEco!* app, but such a test will be aimed at assessing its functionalities from a user perspective, with the aim of identifying functionalities worth to be offered by the new app and functionalities needing to be eliminated or significantly modified. Together with the *GoEco!* app, however, participants will be invited to also test other apps, in order to get a wider understanding and knowledge of the possible functionalities they could pick up in the design of the new app. Favouring direct involvement by the citizens in the design of the app is expected to favour a later diffusion of the app when it will be made available, outside the living lab, to the population in Bellinzona.

A further element differing respect to the ENSCC proposal is the explicit introduction of an additional phase in living lab activities, aimed at widening discussion from the app to the specific Bellinzona

context: participants to the living lab will be stimulated to reflect on their mobility habits, on possible alternatives to car use available to them and on opportunities to be strengthened and critical factors to be removed, from a system perspective. Also, they will be stimulated to think of the whole area of the "great Bellinzona", the new municipality which will result from the administrative aggregation process which will conclude during the living lab activities. This will allow to develop bottom-up, participatory mobility scenarios, and to test novel policy-making and governance approaches for the Bellinzona area (second upscaling level).

A third upscaling level related to the new methodology and focus of the living lab experiment is related to the possibility to replicate the LL participatory approach also to decision making in other fields, such as for example waste management or land planning processes.

Once expected results and methodology were identified, the specific time schedule of the Bellinzona living lab was updated (see Figure 1 below). At present, the communication campaign for the recruitment of the participants is being developed: main slogan and claim have already been identified, together with some introductory and motivational texts to be used in flyers and website; logo, flyer, website and posters are expected to be available by the end of 2016/early 2017, to start recruitment campaign in January 2017.

ProVelo is also developing factsheets to be used during workshop activities in Phase 2: they aim at presenting in a very concise and simplified way best practices and experiences developed in Switzerland and abroad to favour slow mobility. They will support workshop discussion and will be a source of inspiration to participants.

WP6 "External advice and dissemination"

A dissemination plan was developed by the University of Graz, WP6 leader, and summarized in *D6.1 Project Plan: Dissemination*. Since none of the Swiss partners had an active role in it, it is not included as an Annex to the present Annual Report.

Coherently with the Dissemination plan, a project website (www.smarterlabs.eu) and a Facebook page (www.facebook.com/smarterlabs) were soon activated. Project partners share responsibility to keep the website and Facebook page alive, updating it with whenever events or communication material is made available. It is expected that such dissemination tools will start to be actively used as soon as recruitment of the participants to the living lab will start.

National cooperation

The SmarterLabs project involves three Swiss partners: the Institute for Applied Sustainability to the Built Environment at SUPSI, the City of Bellinzona and the association Provelo Ticino. These partners have been actively collaborating since the beginning of the project with the common goal of designing goals, scope and main characteristics of the smart mobility living living lab in the Bellinzona area.

Besides the project partners, cooperation with other national institution includes interaction with the start-up company SparklingLabs, based in Cadempino (TI) (http://sparklinglabs.com), that is likely to be charged by the City of Bellinzona for the technical realization of the smartphone app persuading changes in mobility behaviour, in the framework of the Bellinzona living lab.

International cooperation

The SmarterLabs project is an ERA-NET "ENSCC" project, therefore international cooperation is among its core goals.

Fruitful cooperation channels have been opened with the academic partners participating in the project, favouring a cross-fertilization of approaches, theoretical frameworks, methodologies and applied tools. This will definitely enrich both practical activities developed in the living labs and will also allow to get a broader comprehension of the phenomena of barriers and social exclusion and how to overcome them.

Besides interaction at the academic level, also cooperation between cities and local NGOs has been effectively activated, thanks to the participation of civil servants and NGOs representatives to the first two project meetings, held in two of the SmarterLabs cities.

Evaluation 2016 and outlook for 2017

The SmarterLabs project started at half 2016, with quite an intense schedule of analyses and deliverables to be produced. From the very beginning, all project partners (both at the national and at the international level) showed enthusiasm and commitment to project activities, which is an essential element in a cooperation consortium. Difference among case studies, which at first might have been considered as a limitation or a weak aspect of the project, soon revealed to be an opportunity to get a wider, deeper and more diverse insight on smart urban transformations in the mobility sector.
Assessment of milestones achievement, as indicated in the ENSCC project proposal, shows the project is generally on time; only for deliverable D3.1 *Report on retrospective analysis WP3*, as indicated above, a few weeks of delay are registered. However, D3.1 is expected to be concluded by the end of WP3 (month 12) and lack of achievement of the related milestone was compensated by progress in WP4.

Regarding evolution of activities scheduled for 2017: as indicated above, WP3 activities are expected to be completed by March 2017 (month 12). In the first months of 2017 a significant effort will also be dedicated to launch, manage and assess the Bellinzona living lab (WP4), according to the methodology introduced above. An updated temporal schedule for the activities of the iving lab is presented in Figure 1.

		Oct-Dec 2016	Jan- Mar 2017	Apr - Jun 2017	jul - Set 2017	Oct - Dec 2017	Jan - Mar 2018
Phase 1: Co-design of a smartphone App for mobility behaviour change	Design of the recruitment strategy for LL participants	■					
	Recruitment of LL participants		■				
	App1 test and related discussion			■			
	App2 co-design			■			
	App2 development				■		
	App2 test and further revision					■	
Phase 2: Co-design of future mobility scenarios for Bellinzona	Discussion about barriers and opportunities towards sustainable mobility in Bellinzona; identification of measures						■
	Final workshop with local stakeholders and institutions						■

Figure 1 The time schedule for the development of living lab activities in Bellinzona.

Activities for recruitment of the participants will start in January 2017, while at present the communication campaign is being built. The first meetings of the Living Lab will be performed by March 2017, before elections for the new Municipality, scheduled for April, 2nd 2017. Such elections are definitely an important event, for the City of Bellinzona, since they will be first elections after the decision of enlargement of the present Municipality of Bellinzona, with the aggregation with other twelve surrounding municipalities.

Finally, among the activities scheduled for 2017 is the organization of the SmarterLabs project meeting in Bellinzona. As already happened in the previous meetings, activities will develop over three days, with both practical excursions around the City to show (smart) mobility projects already activated by the City and to highlight main open critical elements, and also scientific discussion on progress in WP activities.

References

All references are indicated in the deliverable documents elaborated within the project.