



Project no. 691735
REPLICATE PROJECT
**Renaissance of Places with Innovative
Citizenship And Technology**



This Project has received funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement N° 691735

REPLICATE PROJECT

REnaissance of PLaces with Innovative Citizenship And Technology

Project no. 691735

H2020–SCC–2015 Smart Cities and Communities

Innovation Action (IA)

D11.8 Innovation Spaces

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1. EXECUTIVE SUMMARY

The main objective of this deliverable is to define the innovation spaces under REPLICATE project and describe all activities that have been delivered following this definition by the consortium and more specifically by the three lighthouse cities.

The term innovation space has been defined very wide including technology hubs, hacker centres, incubators, telecenters, libraries, co-working offices, etc. and can be virtual or physical ones. Therefore, there has been a need to come together with some general ideas and perceptions about the term itself and establish an aligned roadmap on this way. Most of the partners and lighthouse cities have been carrying out this type of activities.

In that sense, this deliverable shows a big variety of ideas and activities which have been developed by the coordination of the project also in collaboration with other SCC1 projects, by Lighthouse Cities and Replicate partners. The following main target groups have pointed:

- Citizens and Neighbourhoods
- Local private and public businesses
- Universities and Research corporations
- Authorities

All activities are described including background of activity, location, used technology/media, time schedule and expected results.

The work described in this document includes the main innovation spaces and serves for the further exploitation of the public project results.

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2. REPLICATE

The REPLICATE (Renaissance of Places with Innovative Citizenship and Technology) Project aims to develop and validate a sustainable city business model in the lighthouse cities (pilot) of San Sebastian, Florence (Italy) and Bristol (United Kingdom), to improve the transition process towards a SmartCity in the fields of energy efficiency, sustainable mobility and ICTs/Infrastructures, accelerating the deployment of innovative technologies, increasing the quality of life of the citizens, and influencing the replication process.

Prior to REPLICATE project, San Sebastian, Florence and Bristol have already collaborated together in the STEEP project (Systems Thinking for Comprehensive City Efficient Energy Planning) which have allowed to the cities generate Smart City Plans in an integrated strategy. STEEP project has defined a collaborative and participatory methodology to reach the objective of defining an Action Plan for particular districts of each city. The districts where the implementations are being carried out in the REPLICATE project are; Urumea Riverside (San Sebastián), Novoli (Florence) and Ashely, Easton and Lawrence Hill Neighbourhood (Bristol).

This methodology has now been transferred to the follower cities, with the purpose of becoming follower cities self-sufficient in the systemic problem structuring method that is at the core of the STEEP methodology.

Being a demonstration project, the main concept that is on the top of the project is REPLICABILITY: it is necessary that the project results can be applicable throughout the lighthouse cities and in other cities, which want to evolve towards the 'smart city' concept, and design scalability plans accordingly. In the lighthouse districts specific studies will be necessary for each of the demonstrated solutions to ensure that they are scalable and can be replicated to assure the large scale deployment of innovative technologies.

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3. INTRODUCTION

3.1 Relation to Other Project Documents

The definition of working procedures under REPLICATE framework is essential for assuring an effective project management and achievement of the project goals. Among other documents, the following high-level documents have been approved that will serve as guideline to the activities to carry out. Those documents are; Project Management Plan, District Management plan and Communication Plan.

All those documents are complying with the contract with the EU (Grant Agreement) including its Annexes, and by the Consortium Agreement (CA).

3.2 Reference documents

This document is based on the following projects level documents:

Ref.	Title	Description
REPLICATE Grant Agreement signed 240713.pdf	Grant Agreement	Grant Agreement no. 691735
DoA REPLICATE (691735)	REPLICATE Annex 1 – DoA to the GA	Description of the Action
REPLICATE Consortium agreement signed December 2015 (7 th December version)	Consortium Agreement	REPLICATE project – Consortium Agreement
REPLICATE Project Management Plan	D 1.1 Project Management Plan (v2)	REPLICATE Project Management Plan
REPLICATE District Management Plans	D 1.4 District Management Plan San Sebastian D1.5 District Management Plan Florence	REPLICATE District Management Plans

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	D1.6 District Management Plan Bristol	
REPLICATE Communication Plan	D 11.1 Communication Plan	REPLICATE Communication Plan

These will also be stored on the shared internal online platform. Where there are contradictions, the documents listed above supersede this deliverable. The Grant Agreement is the contract with the European Commission so takes precedence over all other documents.

3.3 Abbreviations list

BEN	Bristol Energy Network
CA	Consortium Agreement
DoA	Annex I–Description of the Action
EC	European Commission
EMW	European Mobility Week
GA	Grant Agreement
H2020	Horizon 2020
ICT	Information and Communication Technology
IoT	Internet of Things
KWMC	Knowledge West Media Centre
PC	Project Coordinator
PL	Pilot Leader
PMP	Project Management Plan
RES	Renewable Energy Storage
SCC	Smart Cities and Communities
SDN	Software–Defined Networking
TC	Technical Coordinator



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TES	Thermal Energy Storage
WP	Work Package
WPL	Work Package Leader

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4. DELIVERABLE DESCRIPTION

The aim of this deliverable is to explain to the innovation spaces concept under the REPLICATE project and report on the different activities implemented by the Lighthouse Cities around this theme. The following sections are described under the present document which covers:

- Section 1: Executive Summary
- Section 2: REPLICATE
- Section 3: Introduction
- Section 4: Deliverable Description
- Section 5: Definition of Innovation Spaces
- Section 6: Innovation Space inside REPLICATE project
- Section 7: Innovation Spaces by Lighthouse cities
- Section 8: Joint Innovation Space within SCC1 activities
- Section 9: Conclusions

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5. DEFINITION OF INNOVATION SPACES

The term “Innovation Spaces” is very wide, and names like technology hubs, hacker centers, incubators, telecenters, libraries, co-working offices, etc. appear linked to it, and when talking about “spaces” they can be virtual or physical ones. However they are all seen as a model for facilitating collaboration with the purpose of acquiring knowledge and expertise to prosper in the 21st century.

That is why, depending on many different factors, the characteristic of each of them will make it unique. Key elements as the content and the outcome desire (technology, political, social, etc.) , the type of stakeholders (citizens, businesses, public entities, ...), the project phase (planning, monitoring, implementation, ...) and even the budget will determine the activity.

Innovation is defined as “*The application of better solutions that meet new requirements, unarticulated needs, or existing market needs.*” – Maranville, S (1992). “Entrepreneurship in the Business Curriculum”. *Journal of Education for Business*. Vol. 68 No. 1, pp. 27-31.

Having this in mind, at the beginning of the REPLICATE project, innovation space have been defined as a process to enable the creation of better solutions or ideas, in an adequate way considering the mind space, the physical space and the virtual space. It is taken as a methodology in order to leverage the strengths of each individual space and integrate their usage into a comprehensive innovation approach that can drive engagement and momentum for urban city strategies.

Once this have been agreed by the Lighthouse cities and all the partners involved in the project, all the activities and implementations have been planned and developed taken into consideration the characteristics of the actions itself and have applied the innovation space process corresponding circumstances. From the coordination team of the project also, the activities that have been launched have followed the same process.

6. INNOVATION SPACES INSIDE REPLICATE PROJECT

Different Innovation Spaces have been analysed and used by the different WorkPackage leaders and partners that compose REPLICATE consortium. Those are described below;

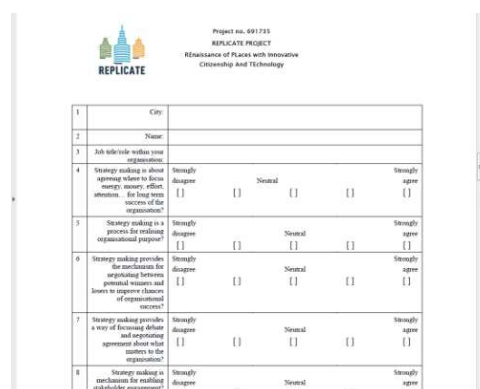
6.1 Innovation Space 1 - Seeking inputs from all stakeholders of the REPLICATE project

Kind of activity:

One of the most relevant activities towards an innovation approach is the work done under the WP2 “ Strategic Planning and Business Models”, where the main objective is to have at the end of the project, fully optimised Smart City Business Model that have been fully demonstrated and validated against all stakeholder needs and proven to be replicable beyond SCC1 funding. In order to gather all those needs and feedback, three levels of studies have been done, to the pilot partners, to other SCC1 Lighthouse cities and identified experts of the field.

A survey was launched in different campaigns along 2017, with the purpose to understand smart city strategy making across a wide number of organizations and places. The aim was to seek the point of view not just from city administrations but also from businesses, universities and other public–sector bodies in order to look for comparisons, differences and synergies. This survey helps to build a picture of strategic capabilities and contribute on the understanding of how they relate to smart city business models.

The survey was communicated to all the organizations identified, where a brief explanation of the purpose and outcome desire was explained.

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1. City					
2. Name					
3. Job title/role within your organization					
4. Strategy making is about agreeing where to focus energy, money, effort, for long term success of the organization?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Strategy making is a process for reaching organizational purpose?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Strategy making provides the mechanism for negotiating between potential interests and issues to improve chances of organizational success?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Strategy making provides a way of focused debate and negotiating agreement about what matters to the organization?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Strategy making is a process for reaching stakeholder agreement?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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Images: Letter sent explaining the survey's objectives and the survey procedure.

In some cases, the survey has done paper based.

The results from the survey will contribute to the delivery of the REPLICATE project and will be made public.

Location: Various

Used technology/media: <https://exeter.onlinesurveys.ac.uk/replicate-strategy-survey>

Time schedule: 2017 – 2019

Expected results: This survey helps to build a picture of strategic capabilities and contribute on the understanding of how they relate to smart city business models. Fully optimised Smart City Business Models needs to be fully demonstrated and validated against stakeholder needs and proven to be replicable beyond SCC1 funding.

6.2 Innovation Space 2 – Sharing knowledge, expertise and best practices with other cities

Kind of activity:

With the purpose of creating a sharing participative environment and under the WP8 “Replication”, webinars are being organized to showcase three specific solutions and implementations by each city (lighthouse cities and follower cities). Cities will have the opportunity to show and learn about the best practices that have worked in other cities.

Location: Various

Used technology/media: Internet

Time schedule: During 2019

Expected results: Share knowledge about best solutions and lessons learnt among the cities.

6.3 Innovation Space 3 – Informative spaces to create sustainable industrial business models

Kind of activity:

Under the WP9 called “Exploitation of results – industrial business plans”, several activities are being done to elaborate sectorial business analyses in order to provide industrial partners

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participating in the pilots an overview of business opportunities. The main objective is to conduct a sectorial business analysis based on the market assessment methods.

Location: Various

Used technology/media: Face to face, Internet

Time schedule: From July 2018 onwards 2019

Expected results: The Sectorial business analysis will be able to use it by the industrial partners to explore what possibilities they have in the deployment of a Smart City and to decide what business model they can implement.

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7. INNOVATION SPACES BY LIGHT HOUSE CITIES

During the next point, a description of the innovations spaces used by the three Lighthouse cities San Sebastian, Florence and Bristol during the entire project life will be done and the ones that are planned also will be listed. The future activities that might be planned will be communicated through the established REPLICATE project communication channels.

The main idea of these activities is to get together all the stakeholders ideas by promoting, learning, engaging people, technology, creating a participatory culture and acquire skills to create innovation solutions for a Smart City.

7.1 SAN SEBASTIAN

Background

Nowadays, many cities seek to find their way to become smart cities. The information developed in the Strategic Smart City Plan of San Sebastian understands this concept as a tool for a vision of future: a smart city project at the service of a transformation strategy that promotes the social sustainability (cohesion–citizenship–participation), economic (local development) and environmental.

In this context, the Smart Action Plan proposes under generic strategic lines, ambitious goals in order to progress in the definition and implementation of initiatives that help to further improve environmental and socio-economic aspects in the city for 2020. These goals are consistent and continue with initiatives currently in force in the city, thanks to the involvement of different municipal departments in the Plan drawing.

The San Sebastián Smart City Action Plan 2016–2020 proposes a model for the interdepartmental coordination so that actions undertaken by the different municipal Departments and Companies have an operating nexus helping to share the knowledge generated, integrating actions to avoid the conflict of interests, facilitating the obtaining of subsidies (either from Europe, State or regional level), consolidating the leadership of the City Council in the interaction with social agents and the private sector and consolidating a Donostia Smart City brand recognizable at European level.

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The San Sebastián Smart City Action Plan 2016–2020 is the result of a complex process with a participatory approach, with the strategic vision focused from planning to implementation. In this sense, under the coordination of Fomento de San Sebastián, 187 people from 96 different public and private entities (Municipal Departments, companies, research centres, universities, sectorial associations, civil organizations, etc.) met in the period May 2014 – May 2015, in different sessions, reaching the definition of the actions/major projects for the city.

On top of that, for more than ten years in Donostia and through the urban specialised clustering model driven by Fomento San Sebastián, the smart specialization of emerging economic sectors has been worked with the purpose of strengthening emerging sectors through local clustering and supporting the business sector in this transformation.

The principal objectives of clustering are:

- Promotion of synergies and collaboration between local agents of public and private sectors
- Support and launch of new innovative projects for the city
- Support for start-ups and the diversification of existing companies, promoting competitive improvements (training, internationalization, innovation, etc.)
- Complete the sector's value chain:
 - o Companies
 - o Technology centres, universities, training centres
 - o Public institutions
 - o Other entities that act in this sector, such as clusters, financial institutions, professional associations and colleges, foundations, user organisations, etc.

All those activities have ended up in an Action plan with a roadmap whose horizon includes the period 2016–2020 and that guarantees the inclusive, sustainable and smart growth through the identification and implementation of specific cohesive and prioritized projects. Donostia's strategy has been designed to help increase the efficiency of its operation in all areas of application, relying on such strengths and opportunities developing local capacities in line with the idea of 'Smart Specialization' driven from Europe. This strategy has been used as a pillar to set the basis of the REPLICATE project.

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The actions included in this plan have been taken into consideration during the planning phase of the REPLICATE project plan and have been included in the specific San Sebastián's pilot action plan. The main focus of the Action Plan is to gather the implementations in one district, the Urumea Riverside District, as a main demonstrator of the SmartCity model generating new business opportunities, improving the quality of life of citizens empowering and promoting participatory processes. The purpose behind this pilot action plan is to develop and validate sustainable city business Models to be replicable and scalable.

INNOVATION SPACES 1 – Inspiring spaces for information

Kind of Activity:

Having in mind the long duration of the project and the wide number and variety of partners involved, it was believed that physical innovation spaces were needed to get together all the partners that build the San Sebastian's consortium.

The main objective of those spaces is to get together different partners and create a place where each of the partners can demonstrate the state of the activities and at the same time, create a place for open discussions in the matter that affects all. Having this in mind, a participatory space is needed where people feel welcome to share their thoughts and gather to work collaboratively on the project.

At the same time informing people on the project is the other outcome of the meeting and therefore a big exhibition room with enough wall space for printed information and digital screens, furniture to facilitate workshops and presentations and dashboards, tea/coffee area and good transport connections are needed.

On top of that, it is believed that the REPLICATE project meeting buildings must be in an energy efficiency environment and be an example of the renewable energy. That is why the locations used for carrying out of that type of meeting needs to be lead with the example. All the pilot quarterly meetings have been carried out in one of those buildings and are thought to comply with all the requirements described above. The buildings are described below;

ENERTIC

ENERTIC is a bioclimatic character building that meets the maximum parameters of Energy Efficiency and fosters the use of renewable energies. Enertic is an Enterprise and Sectorial Innovation Centre to give support and to promote companies from ICT, Energy Efficiency and Smart sectors of San Sebastian. The building is located in the industrial area of the Urumea Riverside District where the main REPLICATE implementations are being deployed. As a Sectorial

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Concentration building, the objective is to create a specific platform to join forces and stimulate cooperation between the companies and agents of this sector, turning the centre into a space of consolidation, growth and creativity in the generation of new employment opportunities that strengthen the local economy and to promote energy efficiency.



Images: Example of two innovation rooms on Enertic building.

Enertic is located in the biggest Industrial Park of the city, which is composed with traditional sector companies. It has been erected as an icon of this industrial park, as a reference for the renovation of this area: from a traditional industrial sector to a Green Innovative Smart economy. Therefore, Enertic can be highlighted as the main evidence of Urumea Riverside's capacity towards the transition to a Smart City.

The nearly zero emissions building, has being designed with energy-conscious parameters, with the aim of reducing the energy demand of the building and relying on renewable sources. The energy reduction objective has been fostered trying to reduce its energy demand, therefore, different measures has been taken into account: orientation, ventilation, natural lighting, solar heating, green wall system, green roof, etc.

In regard to the energy supply of the building several renewable energy features have been considered: geothermal energy being the main heating and cooling system of the building, heat pump to complete heat/cooling demand, co generation, photovoltaic panels, wind turbine and bios wale to reuse rain water for the toilets on the building and a waste water treatment plant.

In 2014 i- SARE was installed in ENERTIC, an experimental and innovative microgrid project adding high innovative value to the building and to the Smart city cluster. The most important elements of the micro grid are:

- Distributed generation systems
- Energy storage systems
- Active load management techniques

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- Power flow monitoring and control systems
- Electric vehicle charging systems
- Preventive and predictive maintenance

One of the main concepts of i-SARE is the possibility to test different scenarios, including a mix of renewable energies and traditional energies to simulate the conditions of the actual grid.

TALENTHOUSE

Talenthouse, the residence for researchers in San Sebastián, is aimed to favour the integration of top-level (“talented”) scholars in the city, with the objective of encouraging the recruitment of talent / high level researchers from Centres, Universities and Companies of Donostia.



Image: Talent House building.

The building has been designed following a bioclimatic approach in order to foster the energy demand reduction of the building. Some of the features that have been taken into account are thermal insulation, light search, adjustable façade, ventilation, materials, etc.

Moreover, regarding the energy and heat demand of the building, it is satisfied with renewable energy sources. There is a biomass installation including 2 boilers for AC/heating, with additional solar energy production (aimed to convert solar energy into thermal energy). Additionally, there are 2 solar photovoltaic groups with 27,7kW of power, reducing 22tn/year of CO2 emissions.

Location: San Sebastián

Used technology/media: Varied

Time schedule: Entire project life cycle

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Expected results: Engagement and inspiration for Smart implementations

INNOVATION SPACES 2 – Neighbourhood engagement to address their needs within the project

Kind of Activity:

With the aim of engaging and involving residents of the Txomin District about the retrofitting activities that include facade retrofitting (thermal isolation and window metalwork), roof and basement adaptation and connection to the District Heating, different communication spaces have been created. All those processes have been launched from the point of view of engaging citizens in the retrofitting and the rest of activities, and milestones, costs, benefits and all the information related have been explained. The activities are:

Exhibition spaces with 3D plans.



Image: Picture taken during the visit of Vice President of EC Mr Maros Sefcovic.

Public briefing of the REPLICATE project from the local Authorities to all Txomin Enea's residents.



Image: Public Briefing held in San Sebastian's town hall

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Different communication media in the city have also been published/communicated and information about the project (general information and also specific information about actions).



Image: Example of an article published in Diario Vasco

Participatory meetings: Meetings with neighbourhood have been done in Txomin Enea's district using a local community space in one of the buildings that is going to be retrofitted. This space was chosen to encourage local residents to attend in a friendly and known space environment and create a sharing and participatory environment.



Image: Haurtxoko of Txomin Enea

Location: Haurtxoko of Txomin Enea, Amenabar's showroom, town hall, local online media

Used technology: Various

Time schedule: Entire project lifecycle

Expected results: Neighbourhood commitment with the project lines and activities

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INNOVATION SPACES 3 – Informative spaces to increase citizenship awareness of the use of renewable energy and energy efficient solutions

Kind of activity:

In order to share and inform citizens on the solutions implemented and bring the project closer, different activities have been held. As it has been mentioned before, depending on the target group, the resources and the technology available and the location, different processes have been organized.

During San Sebastian's Mobility week (under European Mobility Week framework), held on September 2017, the citizens of San Sebastian could see and test different models of Electric Vehicles. The exhibition was held in Alderdi Eder's garden, just in front of the town hall. Many people joined the exhibition and decided to test a vehicle. The overall impression was very good and the point that was highlighted more was the lack of noise during the riding well inside and outside the cars.

At the same time, a variety of meetings are being held with the SS Taxi associations and e-taxi test have been done.



Image: Meeting and presentation with taxi associations.

On the other hand, the new E-motos acquired within the project have accompaniment on sporting events. Apart from promoting the usage of E-motos, it is believed to be a responsible step forward towards the improvement of the quality of the air of the athletes taken part. . This point is apparently important because it should be noted that the development of sports events in the streets of the city has undergone a spectacular increase in recent years, and today we have more than 100 sports events a year. Also, at the end of September 2017 an informative day was organized with the aim of bringing the electric motorcycle closer to citizens. The day consisted of some technical talks and a test of motorcycles on the street. The day also featured an exhibition of motorcycles seconded by 4 motorcycle brands.

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On top of that, many articles have been published in the local media to inform about the works carried out in Urumea Riverside District and increase the awareness on Energy Efficiency.



Image: Example of an article published in Diario Vasco (newspaper).

Different displays have been used on different events, as the examples shown below.

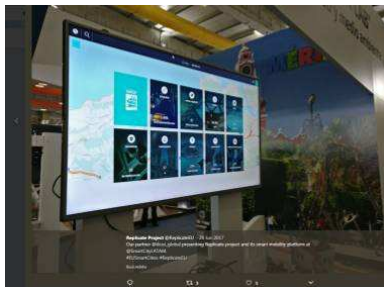


Image: Ikusi – at SmartCityLatam



Image:Ikusi at City Expo BCN Stand

A Youtube channel has also been created to show all the videos related to the project.

Location: Various

Used technology : Various

Time schedule: Entire project lifecycle

Expected results: Increase citizen awareness of energy efficiency and renewable energy through getting the project closer using displays and other traditional media

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INNOVATION SPACE 4 – Participative process in Txomin

Kind of activity:

A participatory process would be launch during the project´s implementation phase with the aim of collecting new ideas and needs from Txomin neighbourhoods and commercial businesses, and those ideas would be analysed and evaluated with the different partners and businesses that conform the Smart Cluster and other collaboration institutes. Even of the relation with all the activities carried out under REPLICATE project and the goal of the project itself, funding of this process is out of REPLICATE funding and this activity is still in design phase. The aim is to select the most appropriate ideas in order to implement them in the future and continue with the Smart district development.

The idea behind this, would be to present the actual needs and ideas that worry Txomin neighbourhood and that the partners could collaborate proving those needs/ideas the best solutions. In order to do that, different activities and sessions would be organized and once the process is finished, the conclusions and the decision makings would be shared.

Location: Various

Used technology: Various

Time schedule: To be determined – Designed phase on going

Expected results: Citizen engagement in the development of a Smart City District

INNOVATION SPACE 5– Citizen participation

Kind of activity:

One of the projects outcomes will be the creation of a new tool for managing citizen participation activities. This tool will enable the citizen participation in government activities and among other advantages, citizens will be able to keep track of the projects and any other information related with them. Citizens will participate building solutions and this is essential to legitimize the participatory processes.

A web site with a private part (for creating and managing participatory processes) and a public part (for allowing citizens participative processes) has been created during this period.

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The private part consists on various forms where municipal editors can introduce all the required data for publishing participative processes. A Participative Process is divided in different phases, and during a phase different type of actions are carried out. The platform contemplates 5 kind of actions:

- Information compilations: citizens can write their opinion, suggestion or input.
- Option selection: citizens can choose one option among various provided options.
- Option prioritization: citizens can prioritize different options among various provided options.
- Internal actions: actions carried out by the public administration related to a participation process but that is not public.
- External actions: actions carried out by the public administrations related to a participation process not opened to the public, but which results are published to the citizens.
- Priorization of budget: citizens can prioritize different options among various provided options, and each option is related to a specific budget.

All that information is managed through the private web portal, and is published in the public web portal of the municipality, allowing citizens participate and provide their opinion about the different issues published by the public administration.

The development of the platform is very advanced, but still in progress.

Location: Website

Used technology/media: WebPlatform

Time schedule: 2018

Expected results: Platform for Citizen participation in municipal processes

INNOVATION SPACE 6 – Demand side platform

Kind of activity:

As part of the action plan of the project, an implementation of a Demand Side Platform is being designed. This tool aims to provide accurate and real-time information to the Txomin neighborhood about their energy consumption and energy bills, which will enable them to learn more about their habits on energy consumption. On top of that, the platform will generate

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recommendations and therefore the users of the platform will be influenced by this information and consequently have an impact on their consumption habits.

This platform is being designed and will be implemented during the following months and will be available to all Txomin Enea neighbourhood.

Location: Website

Used technology/media: WebPlatform

Time schedule: 2018 – 2019

Expected results: Citizen behavioural change on energy consumption. Increase of awareness and empowerment on this topic.

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7.2 FLORENCE

Background

A “Smart City” is one in which the people, both individual citizens and the community as a whole, become the true actors of “urban intelligence.” The Municipality is facing the urban challenge to get a real answer to the needs of citizen: create a simple and effective city where the right answers at the right time to questions are available, a city that is the result of a participatory process based on interaction, dialogue and collaborative processes.

This is the vision of Florence in the smart city plan, a powerful tool to achieve concrete goals for the city and the metropolitan areas thanks to solution for improving the everyone’s quality of life. It is a planning tool that offers a coordinated vision of urban life from an architectural and town–planning perspective and in terms of infrastructures, and mobility, energy efficiency and environmental sustainability by always focusing on the social dimensions of civil cohabitation. And if the term smart city suggests something hyper–technological which is only for experts, we have to clarify that technology is merely a formidable tool for making life easier for citizens or, better, city users.

With the smart city plan the City Council of Florence wishes to go further not only as a time horizon (2050) but also a programming document: not an action plan, not a simple strategic description but rather a space for discussion for highlighting the eventual barriers, measures and actions to be taken to implement a local strategy of smartness that will be gradually extended and make known, also by investigating how to promote and increase awareness and active involvement by the citizens themselves. It is a document that will accompany the city step by step towards the Florence of tomorrow: electric, with zero volumes, green, sustainable and resilient, in a word, smart.

This is the planning and REPLICATE project is our test bed to go from planning to actions, to become a front runner even thanks to a governance model that is taking together all the main stakeholders in the territory (and the University and utilities are part of the REPLICATE project together with the city user as proof of the idea of common management of the city).

City users are the target/actor/empowered people: be able to engage since the beginning is necessary but being able to maintain the people involved, active and responsible is the

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challenge of all projects. It is not just a question on what we have achieved and how we can replicate, expanding or scale up: we have to confirm that the road we have undertaken is exactly what it has been asked for. Engage and empower people is a need-related-solution for a smart and responsive city and it could help us in monitoring the result achieved because the city of tomorrow is starting today.

The area Cascine/Novoli/Le Piagge selected as pilot in REPLICATE project aim to be a concrete example to make things happen, able to test the efficiency and efficacy of a co-create and synergic smart planning, to be reused and scale up. The idea is to lead city business models which generate value for the city itself and for the wellbeing of citizens, aiming to reduce energy use to tackle poverty, use renewable sources of energy to increase local resilience, engage citizens in their lifestyle to change Behaviour, rethink its private choices to increase health and sustainable use of land and contribute to significantly reduce the CO2 emissions thanks to daily smart attitude.

INNOVATION SPACE 1 – Seeking inputs from stakeholders in the REPLICATE project

Kind of activity:

Being aware of what is daily used, felt as necessary and efficacy and planning and acting for a better life is one of the long-life project activity selected as relevant. Be confident that the action/activity/work deployed or under deployment is used by the citizens/inhabitants/students/workers/tourist and is the “right investments” to ensure replicability and scale up (as model system) is done by online surveys.

Launched at least one survey per year by the Statistical office of the Municipality, in order to verify by sector the impact of the project, it is an instrument to help in checking and monitoring by choices of the surveys if the solution adopted is felt as one of the best possible.

The survey is usually launched during a specific campaign closed to a big event in the city: in 2017 it has been done during the European Mobility Week. The survey was open to all city users, published on the website of the Municipality and communicated in all dissemination materials provided for the event. To gain as much number of answers as possible, the survey was included as bonus a “treasure hunt” organized for EMW. The survey has taken about 20 minutes to complete, starting with a short explanation of the scope and outcome.

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*Image: Abstract of EMW program
(online survey for all the week on mobility)*

Location: online

Used technology/media: Internet

Time schedule: 2017 – 2019

Expected results: the results of the survey (expected: 150 per survey) will serve to monitor the degree of awareness of the effects of smart planning, the appreciation of the actions of the project and their concrete use as a preferential choice (for example, public or electric transport) or any obstacles identified.

http://press.comune.fi.it/templates/press.comune.intranet/img_virtual_cm/0/cm_obj_32270.pdf?&tit=

INNOVATION SPACES 2 – Inspiring spaces for information

Kind of activity:

REPLICATE is a long-term project involving a huge number of partners at project level and a local consortium. Engage people, make them aware about the step of project, find spaces to show what's going on, find information, have a concrete example of what is realized but also give opportunity for project partner to have a place to show competences deployed in pilot area and in the city, beside the added value coming from this challenging project has been inspired

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the activity. Closed to the IT, an amazing tool that helps in achieving better results with less effort, the idea was to have material and virtual places to come together and explore how technology could be used to address city issues.

I – Europedirect

Located at Le Murate, an example of regenerating mix use area, the EU information desk has a “Cities4Europe” campaign section where information on EU projects as REPLICATE is available and specific initiatives on REPLICATE are provided in the Europe Direct annual action plan. Adjacent to the office, a room equipped for presentations is going to be available to partners who can use it for free, also for joint events related to the REPLICATE project,



Image: Europedirect (Piazza delle Murate, Florence)

II. REPLICATE Gazebo (information desk in motion)

A mobile info point, which can be used during major events (such as the European Mobility Week) and local fairs (as Firenze Bio – Simple City section) is designed to be positioned independently of where the event takes place and be used by all the partners of the consortium. This is a rental service (gazebo) that is equipped considering the availability of space (park, square,) and that allows not only the distribution of the information materials produced but also the ability to provide specific information on demand.

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Image: Replicate Gazebo (European Mobility Week, Parco delle Cascine, Florence)

III. Digital signage “City of Knowledge Information System”

It is a circuit of "devices" to interact with city users, tourists and citizens composed of a digital signage infrastructure of 43 large indoor monitors located at strategic points to visit the city. On the monitors the information of events, updates and curiosities of the REPLICATE project are passed along with all the useful references to contact the partners or the reference offices.



Image: Example of Digital Signage (Palazzo Vecchio, Florence)

IV. Project in action

It is a place to get information but also a place to test the project even thanks to IoT system and application of the project.

It is important to have innovative places where it is possible to use and verify the results of the project and give the opportunity to get information updated, to learn more and better about the REPLICATE project even through its deployment; some examples:

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Image: Museo del 900 (smart bench)



Image: Parco delle Cascine (infopoint, future smart bench, smart lighting and TLZ, wifi and video surveillance system)



Image: Piazza Beccaria (city link, innovative multi-service telephone booths)

Location: various in Florence (pilot area)

Used technology/media: digital service, website, lot application and sensors, video's

Time schedule: project life

Expected results: updates of the project, information and actionable activity

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INNOVATION SPACES 3 – Neighbourhood engagement to address their needs within the REPLICATE project

Kind of activity:

The aim is to engage and involve residents of the Le Piagge about retrofitting, district heating, RES and TES. Located in via Liguria and via Marche, Le Navi (Le Piagge quarter) are the buildings interested by the work: it involves 300 dwellings for about 700 people. A specific engaging plan and system is provided to make aware people of the energy efficiency intervention, the impact of the public work together with the benefit of the expected results in terms of energy saving and cut bills. People are different, with different needs and “time of interest”. It is important to find a solution that gives all the opportunity to be informed following their needs . To guarantee information on time and on demand, a set of point of interest has been planned to be performed.

I. Information meetings

Assemblies have been organized with all stakeholders to illustrate the aims and objectives of the REPLICATE Project (Phase 1, Phase 2 and 3) and the works of phase 1 in detail.

The interest was high and update meetings with residents has been established to be held periodically to monitor together the public work flows and to verify the feeling of the inhabitants (to be “close” to them as municipality and responsible of the intervention).



Images: Meeting with the residents at Le Navi (Le Piagge, Florence)

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II. Tool

An informative Totem/Stele with the goals of the REPLICATE project has been placed near the children's playground (usually an aggregation area) between the buildings of Via Marche and Via Liguria.

The Totem/Stele recalls the energetic efficiency nature of the project, regarding:

- Phase 1: buildings refurbishment: exterior insulation and finishing system;
- Phase 2 and 3: district heating, RES, TES.

The Totem/Stele (currently under repositioning) is placed to be visible also in the proximity of the public road, explaining its purpose and funding.



Image: Google map location

III. Front office Casa spa

Casa spa is the third party managing the social housing in Florence including Le Navi. Involved in the design of the intervention, it will be also involved in the direction of the work: this means that technicians of Casa spa will be very often at Le Navi during the public work and this makes it possible to have a front office directly managed by Casa spa in loco, able to solve doubts to the tenants in “real time”.

Location: Le Navi

Used technology/media: digital service, video's

Time schedule: project interventions

Expected results: Neighbourhood engagement and commitment with the project lines and activities

Expected number: n/a (various format)

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INNOVATION SPACES 4–Informative spaces to increase citizenship awareness of the use of renewable energy and energy efficient solutions

Kind of activity:

To share and inform citizens about the solutions implemented and bring the project closer, different activities have been held to get people aware and “find” REPLICATE in the city. Touchable experiences have been organized and are planned to strengthen the knowledge and impact on the daily sustainable Behaviour thanks to local event i.e. European Mobility Week or “infrastructure” already installed.

I. E-cars

Driving tests of e-cars have been organized in a circuit inside the park of Le Cascine (pilot area of the project) during the week of sustainable mobility. In Florence, following the theme of the year 2017, has been focused on sharing and electric mobility.



II. Sharing system

Giving citizens the opportunity to rent and use cars and bikes for a free test (and special offer if new users joint the sharing operators during the EMW).



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III. Project Label

Make the project recognizable in the city even thanks to communication label system on “sustainable infrastructures” is an added marketing communication strategy to increase interest of people and make them curious about the project and its ambitious targets such as energy efficiency solutions i.e. e-mobility recharging columns.



Location: Various

Used technology/media: video's, website, app's, press release

Time schedule: Entire project lifecycle

Expected results: Increase citizen awareness of energy efficiency and renewable energy through getting the project closer

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INNOVATION SPACE 5 – Citizen participation and participative process

Kind of activity:

One of the elements that is indispensable for the success of the project is the people; the “Marathon of listening” is the tool used to catch interest and bring people in. Organized by the Mayor’s Office, the “Marathon of listening” is at the basis of the participatory method of a real co-created smart city. Based on system thinking methodology, a process of understanding, it is an open event on a selected theme where citizens/stakeholders can attend and take part to the discussion as the active party of the meeting. The Mayors and all Deputies’ Mayor together with technicians attend the marathon.



Images: Marathon of Listening on Urban Sustainable Planning, Mobility and Creative city

Location: Florence city/quartiers/pilot area

Used technology/media: dedicated website (with report of the events) and video's

<http://maratoneascolto.comune.fi.it>

<https://www.youtube.com/watch?v=q8yT-xR4JN8>

Time schedule: 2016 – 2020

Expected results: the results of the meetings will serve to share the projects ideas and their results, degree of awareness of the effects of project planning and potentiality of new development.

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7.3 BRISTOL

Background

Cities around the world face common challenges that affect the health, wellbeing and happiness of citizens, and the liveability and resilience of urban areas. These urban challenges include congestion, air quality and pollution, and fuel poverty.

Bristol's ambition is to be carbon neutral and run entirely on clean energy by 2050. In that sense, Bristol aims to explore how smart technology could be used to reduce the cost and amount of energy consumed to help tackle fuel poverty. In addition, to use more local clean renewable sources of energy to increase local resilience and enable greater sustainable mobility to increase health and wellbeing as well as enable better access to training and employment.

This project offers an opportunity for people in Bristol to test “tomorrow’s technology today”, learning about and becoming familiar with new technologies that will become increasingly common place. In Bristol, the project has three strands through which citizens can get involved:

- Smart homes – trialing connected appliances and energy efficiency measures, and exploring renewable energy generation.
- Smart streets – exploring electric and shared-use vehicles including a taxi bus, e-bikes and a car club, and new ways of getting around, supported by travel advice and parking apps.
- Created by us – working with local people to explore new ways of tackling local problems with technology.

Digital technologies will be trialled in three lead cities, demonstrating how technology can address urban challenges, before being used more widely. In Bristol the project activity will primarily focus on the wards of Ashley, Easton and Lawrence Hill.

Ashley, Easton and Lawrence Hill district is the largest in Bristol with 50,600 residents. It has a high level of diversity of citizens and the population of the area is growing fast; since 2001 around 30% of all new household spaces in Bristol have been located in the area. Currently 51% of all accommodation in this area is flats, whereas the Bristol average is 20%.

Ashley, Easton and Lawrence Hill have the lowest levels of car availability in the city with 46% of households with no car and the Bristol average being 29%. Even so, the perception of air pollution problems and noise from traffic is highest in the city, and most of the district is included in the city's air quality management area.

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Over the next few years, people in Ashley, Easton and Lawrence Hill could trial new technologies to help them save energy and money, and explore new ways of travelling around and will require a vast range of innovative communication spaces to do so. The project will research how smart technology could benefit local people and neighbourhoods. The project aims to lead to self-sustaining business models which generate value for citizens, not for profit and for profit organisations aiming to reduce energy use to tackle fuel poverty, use more renewable sources of energy to increase local resilience, engage citizens in their energy use and travel patterns to change Behaviour, rethink transport choices to increase health and well-being, contribute to an overall aim to significantly reduce the CO2 emissions and use infrastructure. There will be plenty of opportunities for local people and community groups to get involved and shape the initiatives together, and in the below section we outline these.

INNOVATION SPACE 1 – Seeking inputs from all stakeholders in the REPLICATE project

Kind of activity:

The *Created By Us* work strand is led by Knowle West Media Centre (KWMC) and uses the creative and collaborative methodology of The Bristol Approach to tackle issues identified by residents of Ashley, Easton and Lawrence Hill, such as poor air quality and damp homes.

From the start of the REPLICATE Project, Knowle West Media Centre (KWMC) has engaged stakeholders in Ashley, Easton and Lawrence Hill (the REPLICATE Project area) and Bristol in general. Community groups, businesses, and educational institutions have inputted to the design of the Created By Us strand, exploring the issues of damp homes and air quality. A series of events have been held, some at KWMC, some in East Bristol, and some centrally to enable wide stakeholder participation.



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Images by Ibolya Feher: 'hack day' exploring existing data sets that could help to better understand the issue of damp homes (e.g. health data, house prices, land registry information) during the damp homes work; group discussion at an artist-led workshop to identify issues affecting communities in Bristol and how technology could help.

Location: Ashley, Eaton

Used technology/media: Workshops

Time schedule: Ongoing

Expected results: Citizen behavioural change on energy consumption. Increase of awareness and empowerment on this topic.

INNOVATION SPACE 2 – Sharing knowledge, expertise and best practices, locally, nationally and on European level

Kind of activity:

During the REPLICATE Project, KWMC has supported the development of knowledge and new insights for the benefit of communities and city stakeholders, working with Bristol City Council, University of Bristol and University of the West of England. Additionally, working with cities such as Barcelona (through collaboration with Ideas for Change on the Bristol Approach to Citizen Sensing) has facilitated knowledge exchange internationally and helped to drive the development of sensing technology locally.

Workshops using the Bristol Approach have primarily taken place in Bristol, but the methodology, especially in respect to engaging communities, is seen as Best Practice in the region and on the international stage. The Bristol Approach was named as an URBACT Good Practice in 2017, and KWMC has presented the methodology at the House of Lords (London, UK), and conferences in Berlin and Estonia. More recently, Public Health England requested workshops about the Bristol Approach at their South West regional conference on air quality in June 2018.

Working with colleagues at University of Bristol, KWMC has supported the development of two peer-reviewed papers (currently in progress), and influenced local policy by supporting the development of digital community test beds (including Bristol Is Open, the methodology of The Bristol Approach to Citizen Sensing, and the digital manufacturing space KWMC: The Factory). During the REPLICATE Project, KWMC's work on Created By Us has created opportunities for training, skills development and enterprise, particularly in data literacy and digital manufacturing.

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Researchers from the University of Bristol working on REPLICATE have observed that “these opportunities demonstrate an alternative approach to citizen learning and engagement in smart city planning where learners are seen as active in understanding what they might want to learn in order to improve their lives, rather than this being dictated by others.”



Location: Throughout Bristol, various in England (e.g. Taunton, Somerset, London), Berlin, Germany, Estonia, Poland

Used technology/media: Workshops, Powerpoint presentations

Time schedule: Ongoing

Expected results: Citizen behavioural change in mobility and energy efficiency. Increase of awareness and empowerment on these topics.

INNOVATION SPACES 3– Inspiring spaces for information

Kind of activity:

Both KWMC and its making space KWMC: The Factory act as innovation hubs where people of different backgrounds and with different expertise can come together to explore how technology could be used to address city issues. Sensor cases for use in the REPLICATE Project were designed and constructed at KWMC: The Factory and KWMC is currently exhibiting Commons Sense – a showcase of learning and technology created through application of The Bristol Approach, including the damp homes and air quality work of the Created By Us strand. KWMC has also exhibited the FrogBox damp sensors at local science centre We The Curious (formerly @Bristol). When holding events in Easton, Ashley and Lawrence Hill, KWMC has curated creative, inspiring spaces to engage with citizens using interactive tools such as the ‘breath vest’ (pictured).

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KWMC has also developed a number of online spaces, including The [Bristol Approach to Citizen Sensing](#) website, which is designed to be an engaging, accessible website with examples of local work using the Bristol Approach and links to European and international projects.



Images: learning and resources from the damp homes and air quality work as exhibited in KWMC's Commons Sense exhibition (image by Ibolya Feher); sensor making session at KWMC: The Factory – KWMC's making and manufacturing space

Location: Easton, Ashley, Lawrence Hill, throughout Bristol including Knowle West

Used technology/media: Air Quality Sensors, Humidity Sensors, Digital Fabrication machinery, short films, interactive media as part of exhibition

Time schedule: Ongoing

Expected results: Citizen behavioural change in mobility and energy efficiency. Increase of awareness and empowerment on these topics.

INNOVATION SPACES 4 – Neighbourhood engagement to address their needs within the project

Kind of activity:

As part of the Created By Us strand of the REPLICATE Project, KWMC organised a range of Citizen Sensing workshops in neighbourhood venues in order to increase engagement and enable the building of positive relationships. During the air quality work, KWMC engaged with groups in their own spaces, where they felt comfortable, such as the regular taxi driver forum, school classrooms, and community buildings. The Taxi drivers met weekly to play cards and catch up. The men were mostly Muslim and from Sudan, and their meeting space had a prayer

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space, an area for eating and a small kitchen. KWMC staff and their collaborating artists were invited into that space to hold workshops. Schoolchildren were engaged at School Fayre events as well as in the classroom and at school assemblies. Cyclists attended events at a community centre directly accessible from an off-road path for cyclists and pedestrians.

Researchers from the University of Bristol working on REPLICATE have observed that “through a process of co-design citizens, technologists, civil servants, academics and others were encouraged to share their knowledge and expertise in an open design process that opened up new questions around digital, urban futures. This co-design approach enabled those who were not technology experts to see how things were put together and build knowledge about aspects of technologies and their design that are often difficult to see and understand. This enabled critical citizen engagement with ideas around, for instance, data and data sharing.”



Images: prototype Ladybird air quality sensor from the air quality pilot; prototype FrogBox temperature and humidity sensor from the damp homes pilot

INNOVATION SPACES 5 - Informative spaces to increase citizenship awareness of the use of renewable energy and energy efficient solution

Kind of activity:

KWMC has supported the Smart Homes strand of the REPLICATE Project to develop a Mobile Future Home that can be used as a creative and accessible engagement tool on the streets of Ashley, Easton and Lawrence Hill. The Mobile Future Home is collaboration between commissioned artists, engagement experts and the energy team from Bristol City Council.

Location: For use in Ashley, Easton and Lawrence Hill (mobile, can be used throughout Bristol)

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Used technology/media: Electric bicycle, solar pv panel, Smart appliances, interactive tablet-based activities

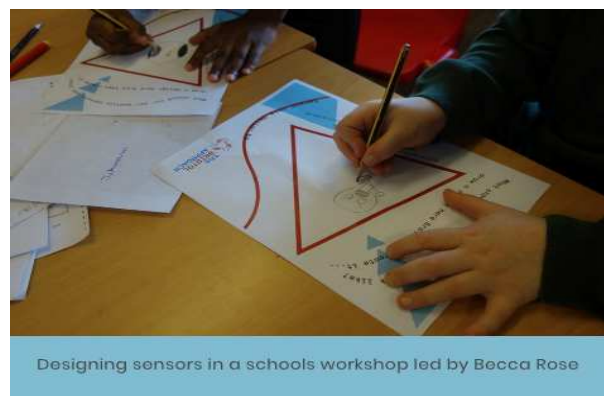
Time schedule: Ongoing

Expected results: Citizen behavioural change on energy consumption. Increase of awareness and empowerment on this topic.

INNOVATION SPACE 6 – Participative process

Kind of activity:

The Bristol Approach is a participative co-design process. It has been employed in the Created By Us strand of REPLICATE and was developed by KWMC, Bristol City Council and Barcelona-based innovation company *Ideas for Change*.



Images: a graphic showing the six phases of the Bristol Approach; school children designing air quality sensors in a school workshop led by artist Becca Rose

Location: Website – is a virtual space but can be accessed anywhere, also a downloadable copy of the Bristol Approach to Citizen Sensing is available

Used technology/media: Website, short films

Time schedule: In use/Ongoing

Expected results: Citizen behavioural change in mobility and energy consumption. Increase of awareness and empowerment on this topic.

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INNOVATION SPACE 7– Citizen participation

Kind of activity:

Community events and activities e.g. stalls at existing festivals, fares etc. Piggy back on to existing events to maximise reach. Participating in other Created By Us events to increase reach/overlap.

Within the last year (to June 2018), KWMC has engaged over 450 people in a range of activities across the REPLICATE Project – from workshops, events and meetings to sensor-making sessions and engagement with the public at community events. Activities include:

- 9 events about on Citizen Sensing
- 5 events about Smart Homes and energy efficiency
- 4 about on electric vehicles and mobility

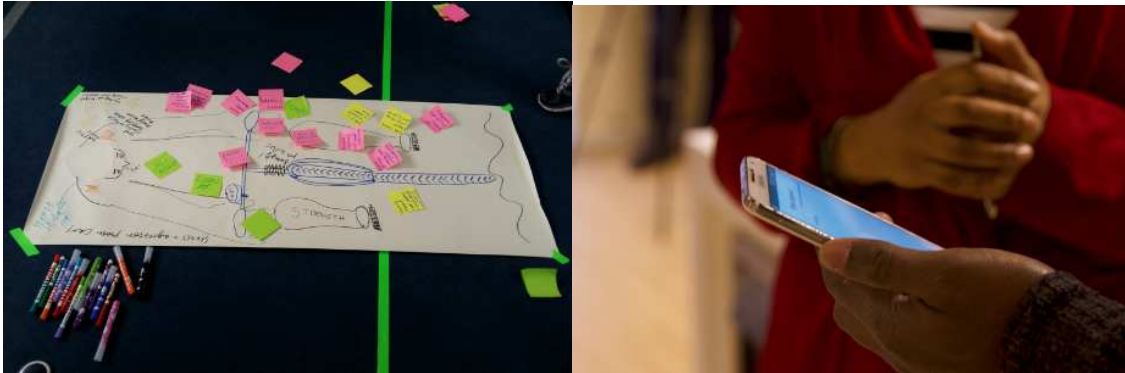
Researchers from University of Bristol have reflected on KWMC's work with the Bristol Approach on the Created By Us strand of the REPLICATE Project and how citizens engaged with the process: "the artists (involved in early workshops) were considered experts in 'opening up a space' for conversation which was recorded, in online and offline spaces, through sketches, blogging and workshops drawing on the idea of the human as a sensing device. Through these conversations issues were identified that affected residents emotionally as well as practically in their everyday lives in the city."



Image: Event day

They go on to say: "The Created By Us approach [using the Bristol Approach] demonstrates an alternative model of citizen engagement that avoids the paternalistic, instrumental discourses and practices common amongst smart city projects. Very different models of citizen engagement are being tried out in these experiments around how citizens, and others, can be drawn into collaborating in smart city planning, in order to build technologies and align resources in more sustainable, and potentially fairer, ways."

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Images: gathering ideas about cycling and sensors at a community workshop about air quality; a taxi driver looks at a prototype for an app during the air quality work.

Location: Throughout Ashley, Easton and Lawrence Hill area.

Used technology/media: Developed brief for artist commission of a mobile smart home using smart technology and renewable energy. Planned use of an electric bike to get the mobile smart home to events throughout REPLICATE area.

Time schedule: Ongoing. Artist has been chosen, events are being planned, BEN engaging with champions.

Expected results: Contribution to recruiting 150 participants and Retrofit participants. Raising awareness of REPLICATE project in general. Bringing community members together to discuss energy.

INNOVATION SPACE 8– Smart connected homes

Kind of Activity:

Promotional materials for events and engagement. Smart Homes is part of REPLICATE, a smart city project aiming to research and prototype a number of smart connected solutions in Bristol. As part of the project, Smart Homes will offer residents ways to explore how smart city technologies can save them money on their energy bills and use energy when it is cheapest and best for the environment offering high-tech devices can be controlled remotely by you and will go a long way towards reducing your energy bills. The offer includes 150 householders in the Ashley, Easton and Lawrence Hill areas of the city smart appliances such as: washing machines, dishwashers and tumble dryers offered for free. As part of this initiative, Bristol is also offering Smart Homes monitoring equipment and a chance to participate in the Residential Demand Response trial with rewards for changing your energy use behaviour. As this is a grant-funded

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pilot scheme, Bristol has a limited supply, so this will be a 'first come first served' offer for eligible residents.



Images: Installation of smart house hold appliances

Location: Various events in Bristol and around the UK or where needed mainly across various targeted streets in project area of Ashley, Easton and Lawrence Hill.

Used technology/media: Smart Home flyer, Smart Home banners and Smart Home welcome pack booklet: voucher for LEDs, data sharing policy, welcome letter, useful contact numbers, terms and conditions and offer document.

Time schedule: Ongoing

Expected results: Bristol City Council is currently trialing smart appliances (smart dishwashers, washing machines and dryers) in 150 homes in Bristol alongside a Demand Side Response (DSR) study to assess the extent to which the technology can aid potential behaviour change for residential DSR.

II.

Kind of Activity:

Mobile show home: 'Future Smart Home' designed and made by local artists to engage local residents in Smart Homes, demo space and sharing the future vision, fun, engaging and interactive.

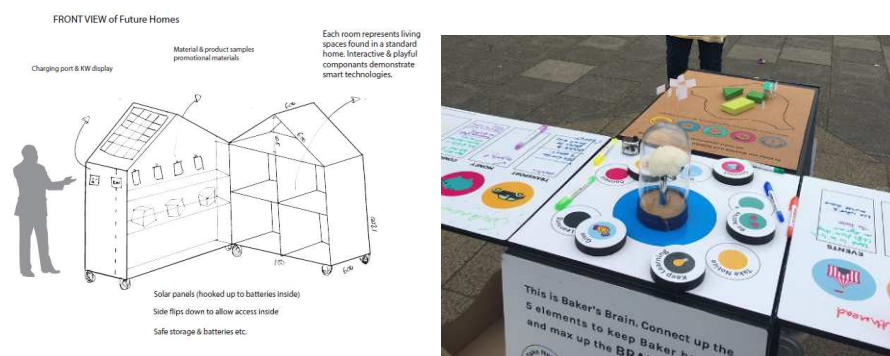
The 'Future Smart Home' is going to be a mobile home that can be towed by a tricycle. It opens out into a playable cornucopia of interactive and visual information, enabling participants to better understand how smart homes and new technologies may be implemented in their lives. The 'Future Smart Home' has 4 aspects to its design allowing for maximum audience participation. Each face of the home has been designed to engage participants in different ways – interactive play, material samples & productions, info graphics and project information and a

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large whiteboard, which can be used to collect thoughts and comments, as well as a learning tool to enable REPLICATE partners to use diagrams to support their conversations.

The 'Future Smart Home' will be fabricated using printed DiBond aluminium panels, allows for vibrant graphics & logos, and acts as a white board as well as being light weight, structurally strong & weather resistant. Removable solar panels will generate electricity, enabling facilitators to demonstrate electrical goods or change devices. Inside the house will be space for the storage of valuables and batteries.

Mobile show home: 'Future Smart Home' designed and made by local artists to engage local residents in Smart Homes. Demo space and sharing the future vision: fun, engaging and interactive.



Images: mobile show

Location: Across various target streets in project area of Ashley, Easton and Lawrence Hill.

Used technology/media: Electric powered items, electric mobile show home shown in the images below.

Time schedule: Brief currently out to tender. Show space to be made in June 2018.

Expected results: Contribution to recruiting 150 participants and 240 Retrofit participants. Raising awareness of project in general. Bringing community members together to discuss about energy, monthly on street events.

III.

Kind of activity:

Community events and activities e.g. stalls at existing festivals, fares etc. Piggy back on to existing events to maximise reach.

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Image: Flyer to increase awareness on energy saving

Location: Across various target streets in project area of Ashley, Easton and Lawrence Hill.

Used technology/media: Produced documents, organisation of events in the area and community centres.

Time schedule: Ongoing.

Expected results: Contribution to recruiting 150 participants. Raising awareness of project in general. Bringing community members together to discuss energy. Monthly on street events.

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8. Joint Innovation space within SCC01 activities

8.1 Innovation Space 1 – Sharing knowledge, expertise and best practices with other Lighthouse City projects

Kind of activity:

REPLICATE project is taking part in different European smart city initiatives in piloting innovative new technologies in cities. Among those initiatives, REPLICATE collaborates with EIP-SCC (European Innovation Partnership for Smart Cities & Communities), SCIS (EU Smart Cities Information System) and SCC01s “Smart Cities Lighthouse Programmes”.

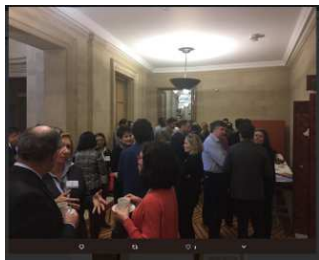
EIP-SCC initiative focus on energy, mobility and integrated infrastructures and engages all sectors from all sizes, including small cities and SMEs, to help ensure an inclusive market with opportunities for all. It seeks to bring together multiple actors from across Europe to collaborate to bring common integrated solutions to the market that will deliver step-change outcomes, at scale and pace.

SCIS brings together project developers, cities, research institutions, industry, experts and citizens from across Europe to collaborate on the creation of smart cities. SCIS is a knowledge platform that encompasses data, experience and know-how collected from Smart Cities that focus on energy, mobility and ICT. SCIS aims to foster replication and therefore analyses project results and experiences to: establish best practices, identify barriers, capture lessons learned, and provide policy recommendations. REPLICATE collaborates actively providing and sharing relevant information about the cities development on those fields as well as lessons learnt and best practices collected during the implementation of the project.

At last, SCC01 programmes with 36 “demonstrator” cities and 42 replication cities within the 2020 programming period are working in a common agenda. To share expertise and knowledge within the SCC01 Lighthouse city partners, a specific common plan, managed by the coordinators of the projects and made by several initiatives are organized for the entire life cycle of the project.

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These meetings have been set-up at several levels, all over Europe and involving all the cities. The format of the meeting is various (from congress to workshop, from fair to special event, from technical meeting to open event) but the scope is the same: make available a place, no matter where it is or how is it, where it is possible to inform and get inspired, have a dialogue and opportunity to compare all the experience and best practice together with challenge and unforeseen difficulties to learn from the experience and then act and prevent.



Location: all over the world

Used technology/media: website, streaming conferences, events, workshops, conferences, etc.

Time schedule: project life

Expected results: sharing experiences and practices from public and private partners; smart benchmark

8.2 Innovation Space 2 – Informative spaces to increase citizenship awareness of Smart City Solutions

Kind of activity:

12 Smart Cities and Communities Lighthouse Projects are working together to maximize the impact and visibility of our projects and solutions. In May 2016 the coordinators and replication officers of 6 EU SCC1 projects met for the first time in Eindhoven during the GA of the EIP-SCC. They joined forces in order to maximize efficient use of existing resources, help each other with information, instruments and tools and create a stronger pull on the smart city market in

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Europe. As a result of this meeting several joint activities of the EU SCC1 projects were agreed under a common coordination structure and different collaboration fields were identified, as for example Business Models, Dissemination and Communication, Replication and Data Management. REPLICATE project is part of those tasks groups where different joint activities and implementations are carried out and is being represented by the coordinator of the project.

One of these activities was the development of an interactive Multitouch, where Lighthouse City projects are part. The Joint SCC Multitouch that was inaugurated during the “Building Sustainability Week” in Stockholm on Oct. 2016 and nowadays is been used at several joint events and international congresses such as EUSEW and Barcelona Smart City Expo.

The interactive Multitouch provides global information about SCC1 Lighthouse cities as well as the follower cities (Socio economic information e.g. number of inhabitants, information about industry, geographical figures e.g. size, climate and cultural activities of the cities and links to networks) and gives insights to the public parts of SCC1 projects (involved cities and partners, main objectives, results etc.). Additionally, provides information about the different specific solutions that are being developed on the fields of actions (energy efficiency, sustainable mobility, infrastructures and ICTs). The user can “surf” through different levels not only by city but also by the type of implementation.



Images: Use of Multitouch at Smart City Expo

Location: International fairs and conferences of reference in smart field.

Used technology/media: Visualization on Multitouch

Time schedule: During the entire project life

Expected results: The Multitouch is an excellent tool to involve visitors into discussions e.g. at fairs and congresses. It was one of the main “eye catcher” at “Smart Cities” Booth during the Barcelona Smart City Expo.

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9. Conclusions

In order to meet future changes, cities are forced with a large number of social, technical and environmental challenges in various areas. Despite on the individual positioning, strengths and weaknesses and medium and long-term goals of cities, they will only be successful with the transformation into a “Smart City”, if all parts of society, citizens, companies, universities, research centres, administrations and authorities are integrated into an overall concept and the respective wishes and demands are taken into consideration. In particular, solutions for energy and the environment, transport, ICT and infrastructures require not only "city-internal" cooperation, but also exchange among cities to increase efficiency and effectiveness.

To receive the necessary attention for planned projects and the opinion of those concerned, special actions are needed. Due to the oversupply of information, communication activities outside the traditional media are necessary. In this REPLICATE project, the participating Lighthouse cities and their partners have planned and carried out many tasks in order to maximize citizen participation, stakeholders collaboration and build up networks between all involved parties.

Most of the actions aim to inform citizens, to motivate them to actively participate in the changes and to sensitize their behaviour regarding energy consumption. It is important that in addition to the theoretical knowledge transfer also practically usable actions (such as e-bikes, apps etc.) are installed with the involvement of industrial partners.

The experiences with the innovation space events can be summarized as follows:

- All sectors of the REPLICATE project (Energy, Mobility, ICT) were covered.
- Within the sectors the most relevant themes addressed by innovation spaces are: *Sharing knowledge, Neighbourhood Engagement, Citizen Awareness and Citizen Participation.*
- The willingness of the citizens to participate in the events or to use e-bikes, e-taxis, apps etc. was high and showed an increasing development.
- The Innovation Space method or process used during the actions influence in the output and therefore it is very important to dedicate time for an adequate planning of the activity to assure that all special characteristics are taken into account. Elements like the type of participators, the human and material resources available and the output are keys in the development process.

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- The majority of the more than 30 activities is on-going and gives the opportunity for medium term evaluation to share the findings within REPLICATE as well as with other SCC1 projects.

All those activities and initiatives described above are lead by the different cities, partners and entities, have as a common goal the activation of the citizens through a common city goal, which aims to improve the quality of life, the environment, opportunities, services and technologies. REPLICATE project is working towards to demonstrate the real opportunity to convert cities into Smart Cities and Innovation Spaces has been seen as a tool to help achieve those objectives. It has been evidenced that those types of tools are a great source for increasing participation, awareness and engagement between citizenships and other agents related with the cities and their development.