



DELIVERABLE

D7.1 Evaluation plan

Project Acronym:	PoliVisu	
Project title:	Policy Development based on Advanced Geospatial Data Analytics and Visualisation	
Grant Agreement No.	769608	
Website:	www.polivisu.eu	
Contact:	info@polivisu.eu	
Version:	1.0	
Date:	30 April 2018	
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Dissemination Level:	Public	X
	Confidential – only consortium members and European Commission Services	

Revision History

Revision	Date	Author	Organization	Description
0.1	20/02/2018	Matteo Satta	ISSY	Initial draft
0.2	20/03/2018	Thimo Thoeye/Joran Van Daele	GENT	Section 5.1
0.3	21/03/2018	Kucera Václav	PILSEN	Section 5.2
0.4	11/04/2018	Grazia Concilio	POLIMI	Section 2
0.5	11/04/2018	Matteo Satta	ISSY	Consolidated version
0.6	11/04/2018	Gert Vervaeet/Lieven Raes	AIV	Revision
0.7	17/04/2018	Frank Maes	GEOSPARC	Revision
0.8	18/04/2018	Matteo Satta	ISSY	Second consolidated version
0.9	26/04/2018	Susie Ruston McAleer	21c	Revision
1.0	30/04/2018	Matteo Satta	ISSY	Final Version

Every effort has been made to ensure that all statements and information contained herein are accurate, however the PoliVisu Project Partners accept no liability for any error or omission in the same.

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Executive Summary

This deliverable defines PoliVisu's evaluation methodology and plan, aimed at benchmarking the outcomes of the pilots and project activities, using the results to guide improvements to tools and strategy. The main objective is to assess whether and how the proposed PoliVisu approach, processes, tools and use of big data are beneficial in the policy-making process.

The evaluation framework, with outlined methodology and evaluation tools, will provide guidance for the project partners for the pilot's scenarios execution and related activities during the four iterations of the pilot cycles.

The evaluation plan, described in this deliverable, is broken down into the above-mentioned iterations matching the pilot cycles (WP6). The methodology is defined closely in conjunction with the WP6 "Pilot scenarios and deployment" work which focuses on implementing a Living Lab strategy, adopting an accelerated approach:

- **Closed iteration**: the first cycle allows the concept and the final roadmap for the production of the project tools to be defined. This cycle will be conducted with groups recruited from the closed network of the pilots (mainly people working internally)
- **Lab Iteration**: the second cycle builds upon the results from the first tests with an open group in a lab environment to validate and improve the PoliVisu project tools
- **Open Iteration**: the third cycle monitors open tests in real life conditions to validate the PoliVisu pilot outcomes and enhance the project tools
- **Impact Iteration**: the final proof of concept with all the outputs developed by the project, evaluating the real world outcomes/impact of the tools, methodologies and processes for policy making including the sustainability/transferability of the PoliVisu solution

Each iteration will not only implement the policy-making model within each pilot but will widen the participant ecosystem involved. The primary goal of this "accelerated approach" is to increase the use of the PoliVisu policy-making solution within each pilot regarding the use of open data for policy making and public involvement. The improvement of the policy-making model and the accompanying tools, processes, lessons learnt, and transferability of the solution are the core drivers of the evaluation cycle with the aim of delivering more publicly accepted policy decisions.

Across each of the four Iterations, the evaluation methodology will focus on a two-pronged evaluation strategy 1) an internal (formative) oriented and 2) an external (summative) evaluation approach:

- **Formative evaluation**: execute and assess the approach and tools of the project in pilot scenarios;
- **Summative evaluation**: monitor and to assess the activities and the actions taken to reach the project's objectives and stated goals (validation).

Both evaluation strategies allow PoliVisu to define and measure the success of the project and provide feedback to the research and development teams, through three 'benchmark' iterations, performed at the end of the first three pilot testing iterations, supplemented by continuous monitoring of the overall project activities.

The evaluation and validation will be focused on different perspectives:

- the *acceptance of the tools* used to make big data useful to the policy-making process;
- the *effectiveness of big data* use at a policy level;
- the *transferability* of the PoliVisu tools, methods and processes.

This whole assessment approach that will be refined during the PoliVisu project will allow assessing whether and how the project proposed methods, processes, tools and use of big open data are beneficial to the PoliVisu policy-making process.

Summary Roadmap

The diagram below summarises the evaluation framework.

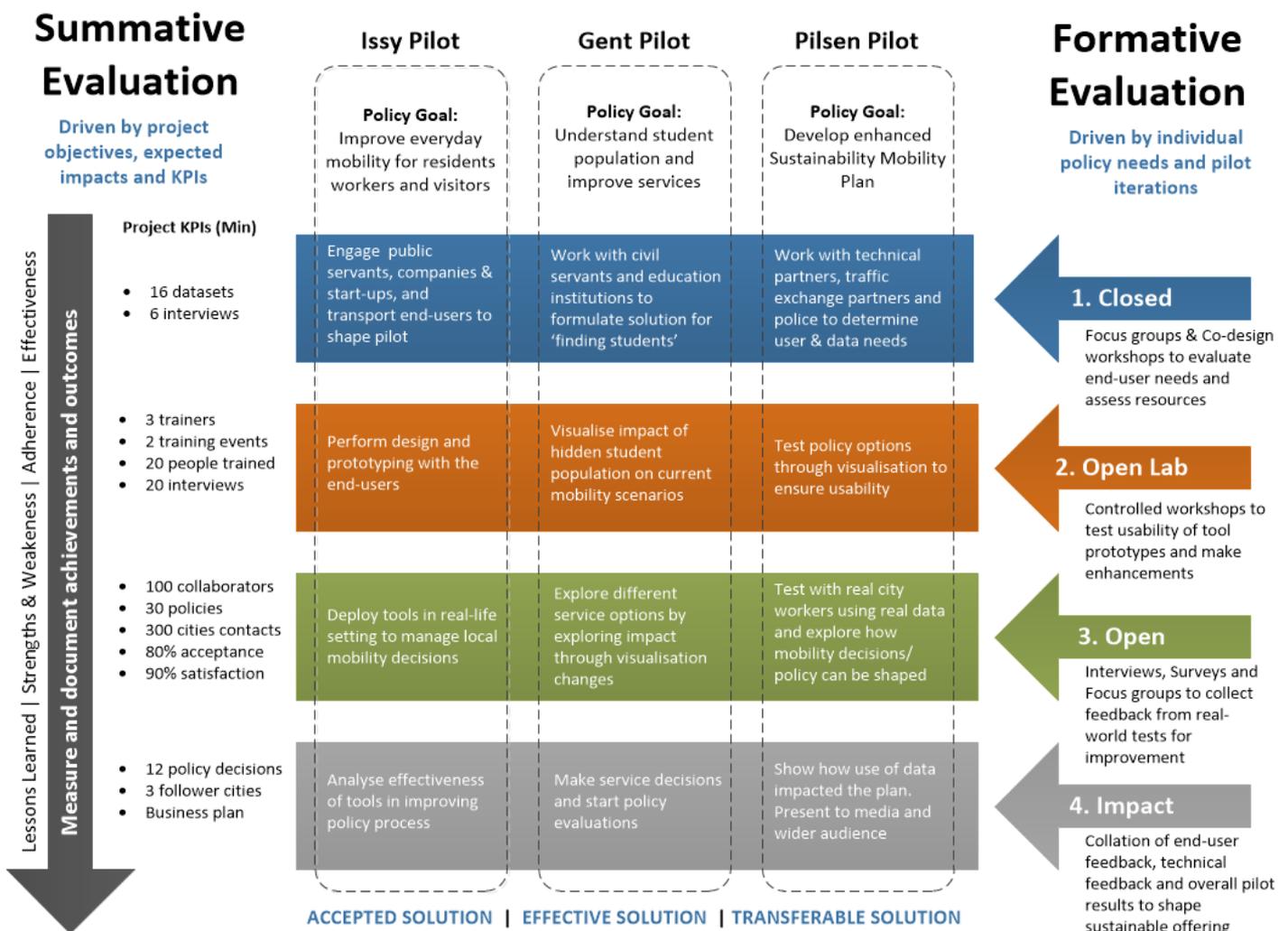


Figure 1 Summary evaluation roadmap

1. Introduction

This deliverable defines PoliVisu's evaluation strategy. It describes the evaluation methodology and plans to execute and assess how and whether the project outcomes meet the proposed objectives and Key Performance Indicators (KPIs), and if they are in conjunction with the policy-making needs as reported in WP3 and pilot results of WP6.

The evaluation strategy focuses on capturing feedback and outcomes during the four pilot iterations. The strategy is driven by the findings of WP3 and WP6 which guide the PoliVisu pilots. The lessons learned will be made reusable to other cases both inside and outside the project.

The first requirements and scenarios are defined in WP3 and WP6. These lead to and guide the technical WP 4 and 5. These requirements focus on the pilot needs concerning data, functionalities and visualisations. The used tools will be co-created, tested and evaluated in close collaboration with the WP6 activities. The results will flow back into to WP3, WP4, WP5, WP6 and WP8.

This iterative approach leads to an impact measurement of the PoliVisu tools on the use of Big Data and the impact of policy-making processes for public authorities. This approach provides actionable feedback to the project partners and helps to define, at a project level, the exploitation and sustainability strategy and framework in WP8.

The evaluation methodology outlined in this deliverable will offer a framework for the project partners to perform the necessary evaluation tasks in a way that the effectiveness of the project tools and their impact on policy-making can be investigated.

This evaluation plan will provide the necessary information needed for the pilot operation plan, based on the scenarios and baseline analysis as reported in WP6. The results will be strictly based on the specific needs of the project, also reflecting methodological considerations as open innovation, usability- and process evaluation.

This evaluation plan has beside four substantive sections:

- **Section 2:** presents the evaluation methodology, with a particular focus in defining the measures to evaluate the use of big data in policy making;
- **Section 3:** gives the different activities and tools that will be conducted in the evaluation framework;
- **Section 4:** presents the Living Lab approach, the operational plans and the activities that will be undertaken in the first iteration, including a description of the approach that will be used during the next iterations;
- **Section 5:** presents the conclusion, including following steps.

2. Evaluation methodology

2.1. The evaluation framework for the Polivisu project

Due to the importance and role, the Polivisu project assigns to the iterations (WP6), as well as to the Living Lab approach chosen for the pilots' implementation; the evaluation methodology distinguishes summative- and formative evaluation (Wholey, 1996; Tessmer, 2013).

Summative evaluations emphasise an overall judgement of the project effectiveness. Conducted referring to the entire project, the focus of summative evaluations is to measure and document project achievements and outcomes. Although information gained from summative evaluations may be used to improve future activities in general (i.e. policymaking by the use of big data), the information is not provided in a timely fashion to provide opportunities for revision or modification of the project strategies while the project itself is still in progress.

Summative evaluation is therefore designed to measure project performance following the entire duration of the project with the focus on identifying the effectiveness of its implementation and provides a means of accountability in assessing the extent to which the projects met the call expectations. Because summative evaluations are a central component of gauging instructional effectiveness at most institutions, the high-stakes nature mandates that these evaluations are valid and reliable. Summative evaluations provide the following:

- Information concerning project adherence to call expectations;
- a means of determining the effectiveness of project activities;
- pilots comparison to determine general lessons learnt from the project;
- information about strengths and weaknesses in project implementation.

Formative evaluations aim to gain quick feedback about the effectiveness of current pilot strategies with the explicit goal of enhancing and improving pilots' implementation during the project time and along the 4 iterations. The focus of formative evaluation is on soliciting feedback that enables revisions of pilots' implementation plan to enhance the learning process. Formative evaluations are pilot based evaluations that are under the control of the pilot responsible partners and target specific pilots' issues or concerns.

For formative evaluation to be effective, it must be goal-directed, have a clear purpose, and provide feedback that enables actionable revisions, and be implemented in a timely manner within the action plan. Formative evaluations are most effective when they are focused on a specific activity at the pilot level. This requires:

- Clear understanding of the challenges/problems in relation to each specific action plan;
- well defined expectations in relation to specific actions of the plan;
- clear definition of achievements/tests to be completed at each iteration ;
- preliminary list of data/information to be collected.

These two evaluation levels are not independent. Due to the role played by the pilots in being evidences of the Polivisu concept and policy making model effectiveness, the formative evaluation is assumed to feed the summative one by providing feedback to the general project outcomes and performances at each iteration.

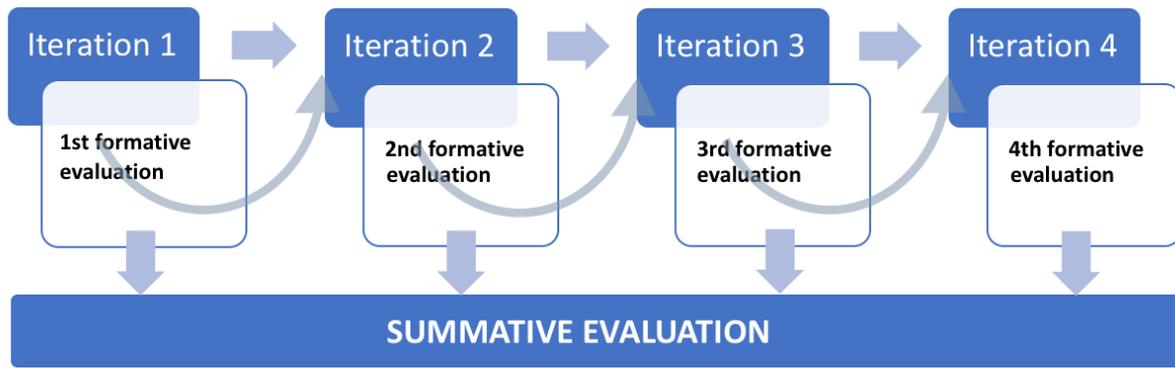


Figure 2 Relation between summative and formative evaluation in the PoliVisu project

2.2. References for the evaluation work

2.2.1. References for summative evaluation in PoliVisu

Summative evaluation will be driven by the project goals, expected impacts, and KPIs. All these references are clearly stated in the DoA.

Taking into considerations the goals:

*The aim is to enhance an open set of digital tools to leverage data to help public sector decision-making become more democratic by (a) **experimenting with different policy options through impact visualisation** and (b) **using the resulting visualisations to engage and harness the collective intelligence of policy stakeholders for collaborative solution development**. [...] To achieve its aims **PoliVisu** has two complementary objectives, each with a set of sub-objectives (DoA p. 3)*

The achievements of the projects goal are the main target of the summative evaluation. It will have a quantitative and a qualitative work to be done. For the quantitative work key references are given by complementary objectives which are presented in relation to **measurements** and **success criteria**. This success criteria will be built upon to define the project and pilot level KPIs further on in this plan.

Table 1 Expected impacts of PoliVisu Project

Objective	Measurement (outcome)	Success Criteria/KPI (output)
1. Establish the use of big data and visualisations as an integral part of policy making through the evolvement and implementation of a PoliVisu Playbox for policy experimentation		
1.1 Review, understand and address challenges presented in the relationship between big data, open data and policy	<ul style="list-style-type: none"> • No. Expert Lens interviews • No. End user questionnaires • No. Focus groups for requirements • Identification of challenges 	<ul style="list-style-type: none"> • Min 20 Interviews • 40 survey participants • 2 workshops per pilot • Complete network map

D7.1 Evaluation Plan

Objective	Measurement (outcome)	Success Criteria/KPI (output)
1.2 Use research findings to create a smarter, systemic and transferable model of data-driven policymaking	<ul style="list-style-type: none"> Quality of the model Acceptance of the model Satisfaction of the model 	<ul style="list-style-type: none"> Covers all end user needs 80% acceptance 90% satisfaction
1.3 Adapt and enhance tried and tested visualisation tools to be used with various data (historic, real-time and social media) to showcase policy decisions/impact	<ul style="list-style-type: none"> No. visualisation types Types of data used No. datasets utilised Clarity of impact Openness of tools 	<ul style="list-style-type: none"> 5 visualisation types Use of all data types in bid Min 15 datasets utilised 70% understanding levels Links to tools source code
1.4 Package enhanced policy model framework and tools into the online PoliVisu Playbox for public policy experimentation	<ul style="list-style-type: none"> Simplicity of understanding Ease of access Positive feedback Increased skills capacity 	<ul style="list-style-type: none"> Passes usability tests Passes user acceptance Optimised for mobile Meets accessibility levels
1.5 Provide real-world conditions in three cities for citizens and policymakers to test out transport-related (mobility) policy issues using the PoliVisu Tools	<ul style="list-style-type: none"> Acceptance of the tools Satisfaction of the tools No. stakeholders collaborating No. policy options explored No. policy decisions made 	<ul style="list-style-type: none"> 90% min acceptance 80% min satisfaction 100 collaborators 30 options explored 12 policy decisions
2. Ensure sustainability and impact through the scalability and transferability of outcomes		
2.1 Package technology, techniques and protocols into a skills building module for cities with no experience using data for policy decisions	<ul style="list-style-type: none"> No. accredited trainers Quality of instructional design Proof of concept tested Feedback from trainers 	<ul style="list-style-type: none"> 3 trainers trained Interactive exercises Webinar with each pilot 90% trainer satisfaction
2.2 Refine module through free initial training days in conjunction with well-known European conferences to upskill public administration's in using data for policy making	<ul style="list-style-type: none"> No. conferences engaged No. people trained Satisfactions with training Levels of increased understanding Transferability of learning 	<ul style="list-style-type: none"> Training at 2 conferences Min 20 people upskilled 90% satisfaction 90% skills improvement 60% transfer feedback
2.3 Create exploitation/business model to further offer PoliVisu as 'On-demand' tools for policy experimentation	<ul style="list-style-type: none"> Meets end users' needs Collaboration with partners Realism of business model Feedback from business experts 	<ul style="list-style-type: none"> Tested with end users Feedback from all partners Based on real evidence Reviewed by 3 experts

Objective	Measurement (outcome)	Success Criteria/KPI (output)
2.4 Develop success stories from the pilot sites that highlight the benefits business case of using PoliVisu to incentivise adoption by new cities	<ul style="list-style-type: none"> • No. case studies created • Key messages evidenced • No. cities targeted • No. new cities ready to adopt 	<ul style="list-style-type: none"> • 3 case studies delivered • Data/stats incorporated • 300 cities contacted • 3 new cities ready to adopt

For the quantitative work a careful collection of data and information will be organized also in relation to the pilots work. This will enable a safe monitoring activity in terms of project progress throughout the project period.

While the tables above represents the main drivers for quantitative work, the qualitative part of the summative evaluation work finds its main references in the DoA table reporting the Expected impacts from the call and the PoliVisu delivers.

Table 2 Expected impacts of the Polivisu Project vs. calls expectations

Call expected Impact	How PoliVisu Delivers
Proposals need to demonstrate the impact to be achieved after the project phase, inter alia, in terms of improved public policy effectiveness, efficiency gains, precision gains, improved consistency and reliance on evidence leading to increased policy compliance	<p>PoliVisu delivers measurable impact by:</p> <ul style="list-style-type: none"> • Increasing data literacy amongst European administrations so they can better utilise data to inform policy development • Evolving the policy making cycle into a continuous policy experimentation approach to stimulate innovation and transformational change • Using collaborative approaches in the policy making process, so that policy is informed by a broad range of input and expertise and meets user needs • Applying new data analytics and visualisation techniques, insights and digital tools so that policy is data driven and evidence based • Utilising data from a variety of different sources - social media, sensors etc. - to create more accurate policy impact predictions • Monitoring, testing and iteratively improving policy to meet complex, changing user needs and making sure it can be successfully implemented
Democratic dimension, such as greater transparency, good governance, increased trust in and the perceived legitimacy of government.	<p>PoliVisu makes policy making more democratic by:</p> <ul style="list-style-type: none"> • Delivering transparency by clearly showing potential/real impact of mobility policies in an easy to understand manner - visualisations • Increasing trust in decision making by using data to present one version of the truth for all stakeholders to openly and collaboratively work with • Amplifying perceived legitimacy of government by responding to citizens' concerns through co-created policy solutions resulting in improved effectiveness of outcomes

Call expected Impact	How PoliVisu Delivers
Additional impact may be increased accessibility to the non-governmental players.	PoliVisu delivers added value by: <ul style="list-style-type: none"> ● Harnessing the levelling power of visualisations to facilitate easier inclusion of non-government players in the decision-making process e.g. citizens, businesses, NGO's ● Ensuring increased accessibility by enabling the policy visualisations to be embedded in any website or existing platform for ease of sharing ● Leveraging existing conversations on social media from non-government players for input into the policy process

To make the table above more operational towards a qualitative-summative evaluation, it is synthesized into the following framework needed to guide the monitoring of the project as well as the collection of information from formative evaluation.

Table 3 Detail of expected impacts of the Polivisu Project

Expected impacts	Criteria	Polivisu delivers
Improving the Making of Public Policies	Effectiveness	- continuous policy experimentation approach
	Efficiency	- continuous policy experimentation approach
	Precision	- data from a variety of different sources - social media, sensors etc. - to create more accurate policy impact predictions - new data analytical and visualisation techniques, insights and digital tools
	Reliability	- data from a variety of different sources - social media, sensors etc. - to create more accurate policy impact predictions
More democratic policy making	Transparency	- clearly showing potential/real impact of mobility policies in an easy to understand manner - visualisations
	Governance	- collaborative approaches in the policy making process - power of visualisations to facilitate easier inclusion of non-government players in the decision-making process e.g. citizens, businesses, NGO's
	Trust	- using data to present one version of the truth for all stakeholders to openly and collaboratively work with policy to meet complex, changing user needs - policy to meet complex, changing user needs

Expected impacts	Criteria	Polivisu delivers
	Government legitimacy	<ul style="list-style-type: none"> - responding to citizens' concerns through co-created policy solutions - policy visualisations to be embedded in any website or existing platform for ease of sharing
Widened use of Big Data in Policy Making	Data Literacy	- increasing data literacy
	Use of data management tools	- using data to present one version of the truth for all stakeholders to openly and collaboratively work with
	Big Data access	- Big Data availability

In the summative evaluation the table above will be used to develop an operational plan for collecting and analysing qualitative information and data.

Most of the qualitative and Quantitative summative evaluation will converge in the check of the KPIs as they are listed in the KPIs table of the Grant Agreement. The KPIs at project level can be found in the below table, while the ones related to pilots can be found in section 5. These have been divided into three core focus areas to ensure the goals of the project are achieved:

- the acceptance of the tools used to make big data useful to the policy-making process;
- the effectiveness of big data use at a policy level;
- the transferability of the PoliVisu tools, methods and processes.

Table 4 PoliVisu KPIs at project level by focused perspective

A) The <u>acceptance of the tools</u> used to make big data useful to the policy-making process			
ID	Outcome	Success criteria (KPI)	Risk
A1	Number of surveys	40	Testers are reluctant to answer
A2	Acceptance of the model	80% overall	TBD after closed iteration
A3	Usability of the model	90% overall	TBD after closed iteration
A4	Number of expert lens interviews	20 interviews	None

A5	Acceptance of the tools	80% overall	TBD after closed iteration
A6	Usability of the tools	90% overall	TBD after closed iteration
B) The <i>effectiveness of big data</i> use at a policy level			
ID	Outcome	Success criteria (KPI)	Risk
B1	Necessary data has been mapped and data models are available	DCAT Metadata available for min. 15 necessary datasets in English.	2
B2	Number of stakeholders collaborating	100	Stakeholders are reluctant to participate
B3	Number of policies explored	30	Pilots do not meet targeted policies
B4	Number of policy decisions	12	Policies are not approved
B5	Number of trainers trained	3	None
B6	Number of training events	2	None
B7	Number of people trained	20	None
B8	Satisfaction of trainers	90% overall	TBD after closed iteration
B9	Satisfaction of trainees	90% overall	TBD after closed iteration
B10	Increased understanding of trainees	90% overall on skills improvement	Self-assessment of trainees is not realistic

C) The <i>transferability</i> of the PoliVisu tools, methods and processes			
ID	Outcome	Success criteria (KPI)	Risk
C1	Clarity of the impact of the tools	70% overall	TBD after closed iteration
C2	Number of success stories	3	Pilots are not successful
C3	Number of follower cities	3	Cities/public authorities do not have budgets/interest to join
C4	Number of Cities contacted	300	None
C5	Business plan	Tested by partners and potential end users, feedback from 3 external experts	None

2.2.2. References for summative evaluation in PoliVisu

As already explained, the formative evaluation is pilots specific. The work to be carried out in making the formative evaluation finds its references in the scenarios the pilots have developed in Deliverable D6.1 and to the implementation plan they develop for dealing with those scenarios. As already underlined in paragraph 2.1, the creation of evaluation tool in the formative part aims at defining tools for guiding the pilots throughout the 4 iterations and this implies that the references for the formative evaluation are made explicit with each implementation plan in the following of this deliverable.

3. Evaluation process

PoliVisu will test-run the Policy Making Model and tools developed within the project in, at least, three pilot cities: Issy-les-Moulineaux, Ghent and Pilsen. This test-run entails the actual development, implementation and monitoring of local policies in 4 cycles, feeding the results back into the overall project's solutions.

The pilot cities which will be part of this test run have been chosen such that they each face similar policy challenges (as reported in D6.1) but are sufficiently diverse in terms of decision making processes. This way, the solutions developed by PoliVisu can be applicable for medium-sized cities.

In this framework, the evaluation process will be focused on different key objectives:

- Regularly monitoring and assessing the impact of the PoliVisu solutions on the policy making in the pilot;
- providing technical and operational recommendations for the effective use of big & open data in policy making;
- evaluating the pilots against the project objectives and requirements defined in WP3.

The deployment and testing of each of the pilots will follow a common four iterations framework:

- closed iteration;
- lab iteration;
- open iteration;
- Impact iteration.

Although continuity between and within the iterations is necessary given the iterative nature of the development of each pilot, each phase has its own finality and focus in order to take advantage of the Living Lab approach.

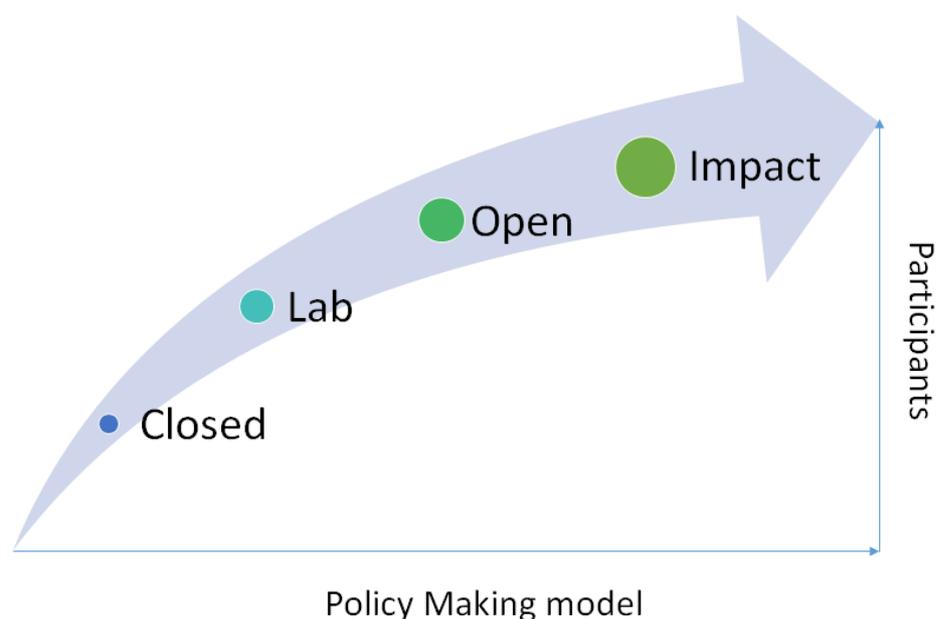


Figure 3 Increasing scale of living lab activities in pilot cities

3.1. Closed iteration

During the first iteration, running between May and September 2018, PoliVisu will undertake a first development of the tools and visualisations to be used in policy making.

This cycle will allow to define the concept and the final roadmap of the production of the project tools.

This phase will also have a crucial role to make PoliVisu a real brick in Big Data strategy in pilots sites, creating a real involvement also of all people that may play a role in the project, even if they are not daily involved into it.

To this end, the cycle will be mainly conducted on closed groups composed of potential users part of the internal network of pilots, allowing to receive feedbacks about:

- users' needs for the development of tools and visualisations
- data literacy of users on big data
- barriers to the potential use of big data in policy making

While recruiting users, the pilots will propose interactive activities, mainly based on focus groups and workshops, making possible to receive feedbacks about the 3 above mentioned points.

The users in this phase will be recruited by pilots within their closed network, namely:

- users working in the pilots, not involved in PoliVisu, and involved in policy making at various levels;
- users working in municipal services agencies;
- users working in closed partners of the municipality, in the public and private sector.

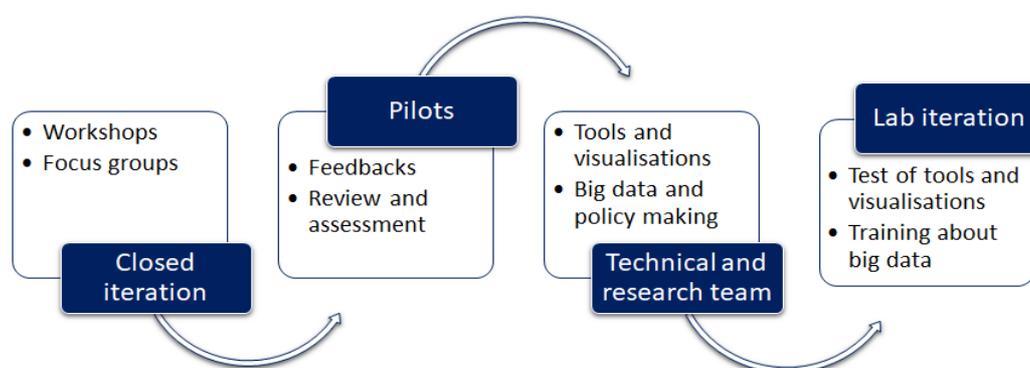


Figure 4 Closed iteration to lab iteration flow

The experiences of this phase will flow back to the technical development teams and the research team more generally in order to further develop the visualisations and tools, but also to define a common strategy to tackle the barriers identified before a deployment to a larger community.

3.2. Lab iteration

Once the Closed iteration will have been fully deployed and all assessments transmitted to the technical and research team, after an interim phase needed to the developers of the project to meet the mentioned assessments, a larger community phase will start.

In this cycle, each pilot will start deploying its own scenarios dealing with the specificities. To this end, this second cycle will define the first tests with an open group, but in a controlled lab environment, including also training of users, to allow to validate and improve the tools of the project.

To this end, the cycle will be mainly conducted on groups composed of potential users' part of the network of pilots, allowing them to receive feedbacks about:

- users' needs satisfaction in terms of usefulness
- usability of the tools and solutions
- potential role of the tools and visualisations on a policy making process

The recruitment of users to participate to the different activities, mainly based on observation workshops and focus groups as in closed iteration, will be based on classical communication (such as e-mails, small groups' newsletters, partners of local projects).

Moreover, the activities will be set up and based on two dimensions:

- training about the tools and big data
- receiving feedback about their feeling about the tools (satisfaction, usability and potential role)

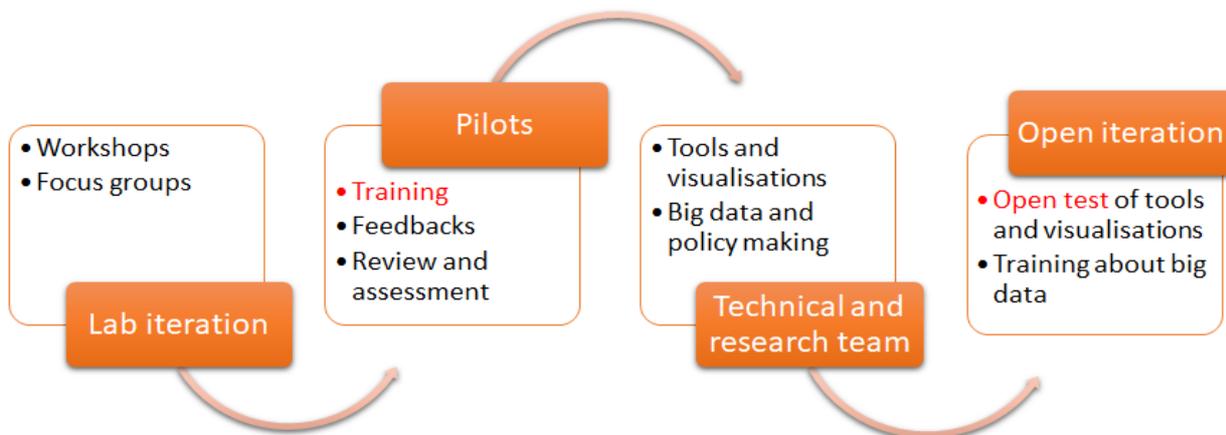


Figure 5 Lab iteration to open iteration flow

While recruited the users, the pilots will propose them some interactive activities, mainly based on focus groups and workshops, making possible to receive feedbacks about the 3 above mentioned points.

The users in this phase will be recruited by pilots in their network, but the type of stakeholder will change, as reported in section 6, by pilot to meet the different scenarios needs.

The experiences of this phase will flow back to the technical development teams and the research team more generally in order to further develop the visualisations and tools.

3.3. Open iteration

The third iteration will open the tests in real life conditions to fully validate the outcomes and to fully deploy the pilots’ scenarios to have a final confirmation about the usability and the usefulness of the project concept and tools.

This third cycle will define open tests with a targeted communication to an open audience and in real conditions, including also training of users whenever necessary, to allow to validate the tools of the project.

To this end, the cycle will be mainly conducted on an open audience composed of potential users, allowing pilots to have feedbacks about:

- usefulness of tools/visualisations on policy making
- usability of the tools and visualisations
- potential role of the tools and visualisations on a policy making process
- inclination and readiness of the various stakeholders groups to adopt a big data approach

The recruitment of users to participate to the different activities will be based mainly on call for testers and workshops, driving the users to use the tools/visualisation and provide feedbacks, also through:

- training about the tools and big data
- participation to local events to showcase the pilots’ solutions

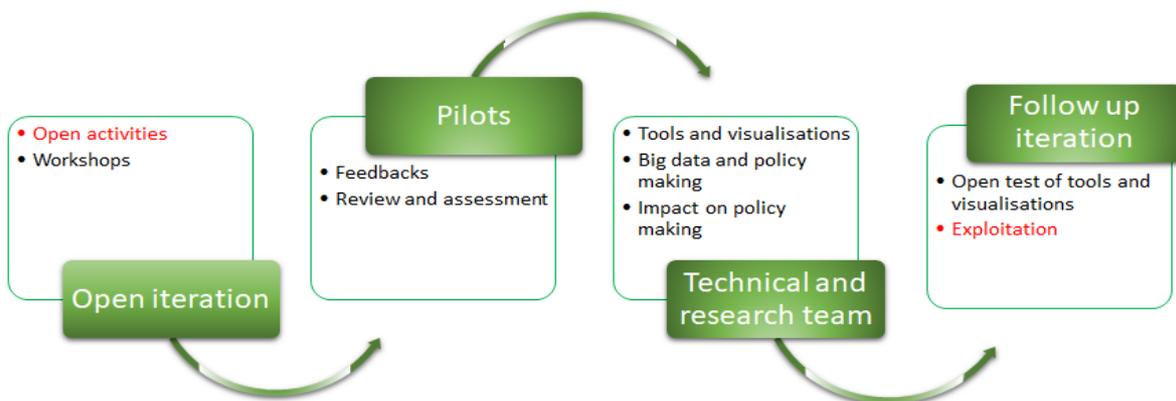


Figure 6 Open iteration to follow up iteration flow

While recruited the users, the pilots will propose them some interactive activities, making possible to give feedbacks to the technical development teams and the research team more generally in order to propose a final version of visualisations and tools before the final proof of concept.

3.4. Impact iteration

Following the 3 iterations described above, the final iteration of the project will be a final demonstrator with all the tools developed by the project, allowing to show how these can have a real impact in use of data for policy making.

This final cycle will make real the pilot scenarios will all the due amendments related to the lessons learnt of the previous cycles and it will make possible to propose to the users a real toolkit to use tools and visualisations to adapt policy making to big data.

This phase will propose real training to users, proposed by project partners and based on project findings and solutions, but particularly demonstrations of the tools to potential real users to propose to use the PoliVisu toolkit to replicate one of more solutions.

To this end, the cycle will be mainly conducted on an open audience composed of potential users, allowing pilots to have feedbacks about:

- Usefulness of tools/visualisations on policy making;
- commercial value/transferability of the tools and visualisations;
- Identify potential adopters of the solutions.

The recruitment of users to participate to the different activities will be based mainly on open demonstrations, driving the users to use the tools/visualisation and provide feedbacks about their usefulness and commercial value.

Table 5 Evaluation process

Iteration	Dates (assessment cycle)	Stakeholders	Activities	Goals
Closed	Start: 1 May 2018 End: 30 September 2018	Closed pilots' network	Workshops focus groups Interviews Work on the field	Design and co-design of tools and procedures
Lab	Start: 1 February 2019 End: 31 July 2019	Pilots' network	Workshops Focus groups Interviews Work on the field	Training Feedbacks Usability
Open	Start: 1 October 2019 End: 30 March 2020	Open to all	Open calls Workshops Surveys Questionnaires	Feedbacks Real life tests
Impact	Start: 1 June 2020 End: 30 October 2020	Open to all	Training Workshops Questionnaire Presentations	Proof of concept Exploitation

4. Evaluation tools

PoliVisu's works comprises a first co-design phase, followed by a validation and co-creation one with a final validation/commercialisation phase.

The first iteration for PoliVisu is highly focused on the design of the project tools with all the stakeholders involved in the pilots scenarios. In this phase, the project will mainly focus on qualitative feedbacks that will be collected not just to design the tools, but also to define how they might have an impact in the pilots' policy making process. This track should result in a collaborative, and iterative process between pilots (as end users) and technical team.

In the following iterations, PoliVisu will use a mix of tools to have qualitative and quantitative feedbacks on usability and usefulness of tools/visualisations and the possible role played in policy making.

4.1. Focus groups

The focus group methodology is a form of group interview supported by a facilitator that capitalizes on communication between participants allowing them to interact and exchange ideas and thoughts. In the framework of PoliVisu, Focus group discussions will involve between 5 to 10 participants and they will be organised around two different techniques that will apply according to the pilots:

- An approach based on interactive modes based on the participation of a facilitator that will have the responsibility to stimulate the discussion proposing visualisations and options in a game mode, allowing to build with the participants to build the "wish tools and visualisations" and to learn, later on, to get engaged to the tools and visualisations that will be created.

A classical approach based on a facilitator and a researcher moderating the group with the specific aim of recording not only the content of the discussion, but also attitudes and interaction modalities of the group's members. The method is used for a qualitative evaluation approach to reveal opinions, needs and interests of the different stakeholders, though it may suffer from group bias. The discussion with participants will take approximately a couple of hours and it will allow to collect information about their experiences, expectations, potential or existing barriers and issues on the use of visualisation tools and big data in their daily work.

The first approach will be used more on the first two iterations to allow to build the tools and visualisation and to engage the users, while the classical approach will be more useful in the last two iterations, while some volunteers will have to test and evaluate the project solutions while better shaped.

4.2. Co-Design Workshops

In the framework of PoliVisu, all pilots will drive, at least, 2 workshops each to co-design, engage and train participants of the different living labs. Those workshops will be different according to the main targets and the iteration in which each one of them will be proposed and organised.

During the first cycles (iteration 1 and 2), workshops will be organised using methods within design thinking, involving active consultation with stakeholders in the design process. Stakeholders are involved and stimulated to participate, making possible to improve the probability of a usable and useful design.

During this type of workshop support materials will be used, such as sticky notes, boards, posters, etc., to help to involve also non-technical users in the definition of the tools and the visualisations. Thus, technical and non-technical participants should be able to participate and feel at the same level to allow to detect different needs and the related uses.

Moreover, training workshops will be organised though at later stages of the evaluation process, when the PlayBox is ready to be tested by the primary target audience outside the three pilot cities.

The workshops will be part of a free training programme offered to public administrations across Europe, aimed primarily at making would-be adopters capable of deploying the PoliVisu framework on their own post project. The plan is to run training activities in conjunction with high-profile European events that gather a large pool of city-level decision-makers, such as Smart Cities Conference, Smart City Expo and Major Cities of Europe, to name just a few. One-on-one training tailored to the needs of specific authorities will be provided upon request. Depending on the requirements, it can take the form of a field trip or be delivered online, by means of a webinar, for example.

4.3. Open Activities

Starting from iterations 3, PoliVisu will start open activities enabling a range of people to start using the project solutions in order to validate them.

This step will make possible to validate the tools/visualisation and the policy making model proposed by the project, but also to better define the possible role of the use of big data in the framework of the this model.

The cycles using open activities will be particular sensitive as the pilot cities will need to go through a number of steps:

- Recruitment of participants: this is a particularly challenging phase for all pilots, being them obliged to identify users depending on the purpose/target of their scenario. Moreover, it will be necessary to define strategies to engage users, while one-on-one personal outreach is surely the best option, but digital communication tools.
- Deployment of services: once recruited the users, it will necessary to make sure to propose activities that might have a clear impact on engagement. Pilots will identify, also following the feedbacks and lessons learnt in the previous iterations, activities based on physical and/or remote workshops to train the users, followed by remote activities (use of the tools in the real environment) to allow to have real tests.
- Evaluation of services: during the deployment of the activities and at the end of those, in an ad hoc final workshop, participants will be asked to answer to a survey and, for the people that will be available, they will be interviewed. This will allow to have a real feedback on real life tests, making possible to improve both the tools and the policy making model from a user point of view.

These activities will have different formats, starting from workshops, as reported on 4.2, to go to bigger formats, such as data jams/hackathons, according to the needs of the pilots and the project at the end of iteration 2. Moreover, the project will study to propose also gamification activities through digital tools (ex. social networks), also to be able to define and to test the use of big data to evaluate the activities and crowdsource ideas for improvement of tools and policy making model.

4.4. Interviews and Expert Lens

Mainly in the first two iterations, the interview method will be used to to gain a deeper understanding of meaningful themes, practices, and relationships from the interviewees' own perspectives through the

collection of qualitative user-related information. Moreover, interviews will be also used in the last two iterations to get qualitative feedbacks to deepen and confirm the quantitative feedbacks received.

This approach will allow to deepen the understanding of possible role efficiency and barriers in the use of the tools and, more generally, big data in each pilot to be able to validate the policy making model proposed by the project.

The interviews will be proposed to the participants of the focus groups and workshops in the first two iterations, while in the following two iterations those will be proposed to 5 experts per pilot. Pilots will be responsible to detect the profiles adapted to their scenarios and activities to be able to receive high level feedbacks useful to clearly benchmark project results and possible improvements.

To set the interviews up, each pilot will be responsible to conduct them, with the support of WP7 lead and POLIMI, following the below scheme:

- interviews will have an approximate duration of one hour
- The contributions will be coded
- The interviews will be conducted following an interview guide

The pilot leaders will have to use the online feedback format proposed by evaluation lead and send it, with any possible insight, in the week following the interview to allow the research and technical partners to analyse it and make it useful to the whole project.

4.5. Surveys and questionnaires

Questionnaires will be used starting from iteration 3 to ask about user experience and acceptance.

The use of surveys will be useful to have a more quantitative evaluation while the iterations will start to move towards a bigger number of users. Taking into consideration the project goals and the need to have feedbacks not just on the usability of the tools, but also about the feeling of users on the policy making model and the use of big data, the structure of the questionnaires will be based on side-by-side matrix to be able to cross-check the results of these two aspects and to define any possible match about the two above mentioned aspects.

Moreover, these surveys, that will be built before iteration 3 in accordance with pilots, research and technical team, will propose a particular structure and process as it follows:

- it will have a common first (profile) and final (policy making and big data) part, while questions about the tools and scenarios will be adapted with the help of pilots
- it will be mainly be proposed on site to have more effective responsiveness of users, digital tools will be used only whenever really necessary
- it will never have more than 10 questions
- it will be tested to avoid that respondent will have to spend more than 10 minutes on the survey

These two final points are particularly important as they will have to assure to avoid drop-out rates too important, while the limited number of questions will be compensated with the interviews, as reported in D4.4, and additional evaluation tools using data as reported in the following paragraph 4.6.

4.6. Data and Big Data use in evaluation

Taking into account the objectives of the project, the evaluation tools used will not be limited to “classical” ones, but it will be put in place also an experimental framework allowing to test use of data to evaluate activities successfulness and gather feedbacks from it. This will mainly happen starting from iteration 3 of the project.

This will be highly related to the type of tools and visualisations that will be developed and the digital space in which they will be hosted, making then clear that this evaluation may change and/or be adapted pilot by pilot according to their activities and:

- the evaluation tools deployed
- the needed insights and feedbacks
- the type of the tools and visualisations developed
- the nature of the platform that will host the tools/visualisations (website, open data platform...)

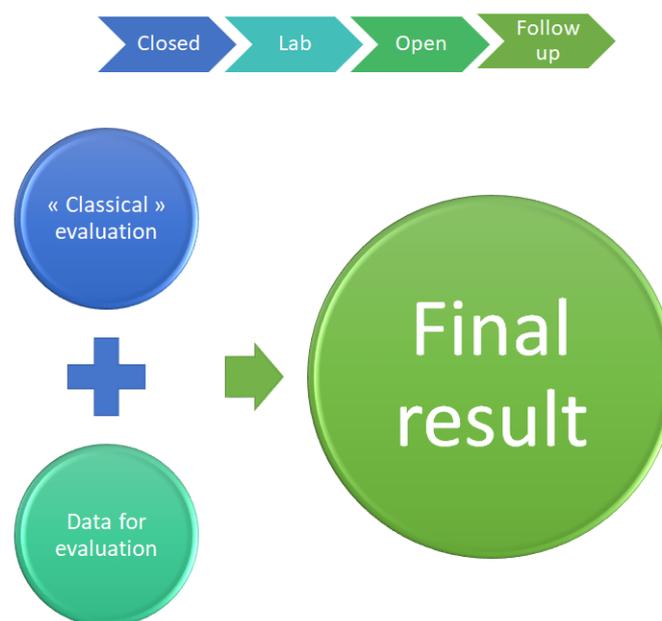


Figure 7 Representation of use of summative use of data and classical tools for evaluation

This experimental evaluation procedure will then represent an additional source of feedbacks, relying on the data that can be gathered from interactions of users, such as:

- number of logging (where available)
- number of visits (unique users)
- time spent on tools/visualisations per user (average and median)

- number of interactions on social media posts reporting the tools (impressions)
- sentiment analysis on social networks (Twitter)

This list is not exhaustive and it will be a living one, according to the development of tools/visualisations and the deployment of pilot activities (i.e. lessons learnt during those), allowing to identify the indicators that will have the need to be completed and/or supported by use of data.

5. Evaluation and Living Labs

The methodology and the process reported in this deliverable will be deployed by the 3 project pilots, Ghent, Pilsen and Issy, that will be working on an increasing strategy allowing to propose the project solutions to an audience wider and wider iteration by iteration.

As reported in the table below, the work of pilots, with the support of all partners involved in WP6 and WP7, will target to achieve all the PoliVisu objectives and goals leading it to accomplish the milestones of the project reported in table 6 below.

Table 6 KPIs and Success criteria of pilots' activities¹

ID	Outcome	Success criteria (KPI)	Risk
1	Number of focus groups for requirements identification and challenges	2 workshops	None
2	Identification of relation between big data, open data and policy	Network map	Relation is not found
3	Number of expert lens interviews	5 interviews	None
4	Number of open activity to be organised for testers engagement	2	Tools need further development and delay activities
5	Number of surveys	15	Testers are reluctant to answer
6	Number of visualisations	5	None
7	Number of datasets used	Min. 15	Number of data of pilots is not sufficient

¹ Success criteria of pilots' KPIs may not be 100% of project KPI, as in some cases KPIs may apply also to other activities. As a simple example, expert lens interviews do not apply just to pilot and living lab activities.

ID	Outcome	Success criteria (KPI)	Risk
8	Number of stakeholders collaborating	20	Stakeholders are reluctant to participate
9	Number of policies explored	7	Pilots do not meet targeted policies
10	Number of successful policies	2	Policies are not approved
11	Acceptance of the model	80% overall	TBD after closed iteration
12	Usability of the model	90% overall	TBD after closed iteration
13	Acceptance of the tools	80% overall	TBD after closed iteration
14	Usability of the tools	90% overall	TBD after closed iteration
15	Clarity of the impact of the tools	70% overall	TBD after closed iteration

5.1. Ghent

5.1.1. Description

Ghent's PoliVisu pilot will focus on the identification of "hidden" citizens groups, exemplified first and foremost by the large group of students that peruses the city. Subsequently, policy decisions can be tailored to these citizen groups, for instance those related to mobility or local economy. The Living Lab activities will thus consist out of two main strands:

- Co-creation of policy creation, implementation and monitoring tools with civil servants in charge of students, mobility, economy and housing. (Internal)
- Co-creation of potential policies with students using the PoliVisu Playbox. (External)

In this process, Ghent Living Lab will be involved in this process as it has a "core business" to support City in living lab activities. This body is actually a partner network which aims to co-create Smart City solutions through a large network of stakeholders that are active in Ghent. Among these partners are all local educational institutions, thus it should make easier to engage a large number of students and representatives of these institutions themselves.

5.1.2. First iteration

The first cycle will be managed by the city internally, whereas later on the pilot will engage the Ghent Living Lab. For the first iteration, Ghent wants to focus on its first policy scenario, as described in D6.1, in which it will **investigate the student housing locations, being those unknown today to the city**. The main goal of the first iteration is to **explore the possibilities of the current datasets** (can the city make conclusions based on the available datasets? Which data does the city need in order to make the right conclusions etc.). Ideally, after the first iteration we can create a visualisation of the main student housing locations. (If not for the whole city, only for different 'sectors' or areas in the city).

The main goals & planning of the Ghent Student Housing scenario will be:

- Investigate the student housing locations, being those unknown today to the city.
- Explore the possibilities of the current datasets
- Analysing which datasets are needed for further policy research

In the first iteration this will drive to various activities as reported below.

Student Housing Data Analysis

The first activity for this iteration consists of combining the already available datasets shared by some education institutions with the data collected from the living department of the city, such as fire-safety registers of housings etc. The involved stakeholders are the civil servants, as they perform the different analysis, the housing department (provides data, gives feedback) and the educational institutions (provides datasets if possible). With this activity the city wants to make it possible to get a clear assessment of the completeness and correctness of the combined data sources currently used in terms of student populations and housing. In order to evaluate this internal analysis, the city plans to have interactive discussion internally (with the different departments who are involved, such as the housing department, youth department....). After these discussions, the city can collect useful feedback and suggestions from the stakeholders and derive different conclusions and follow-up steps for the next iterations.

Field Investigations

In order to enrich the existing datasets, a real-world assessment of whether buildings are being used as student housing is a necessity. This activity will be based on visual inspection of a sample of houses in Ghent (at least 9000 buildings). Involved in this activity are the civil servants (who will guide and evaluate the activity), the housing department (as they will run the investigation on the \pm 9000 houses). This investigation will allow the city to assess the quality of the data sources employed in the first activity, which is reported above, and will validate whether the data analysis yields applicable results. In order to evaluate this activity, a thorough evaluation (consisting of a presentation and a subsequent discussion) will be held with the housing department (see next activity) and other involved civil servants. One of the outcomes can be the conclusion that extra analysis is needed, or that a more extensive field investigation is necessary.

Presentation of Student Housing results

The results of the data analysis activity and its validation exercise (the field investigation) will be presented to the relevant internal stakeholders of the housing department. The goal of this meeting is twofold: on the one

hand, domain experts active within the housing department will be able to draw more in-depth conclusions from the data, and on the other hand, it will create an internal buy-in for a more comprehensive exercise in the scope of the PoliVisu project. The city aims to have at least 10 participants (as part of the 1.1. objective in the Grant Agreement, which page 129 & 130) from the civil service (housing department, youth department). In a later stadium, the city can involve other stakeholders, such as the education institutions and perhaps even the students themselves, in order to create a common understanding of the current ‘problem’ in which PoliVisu could provide feasible solutions. The main goal of these presentations is to create a clear buy-in for a new and more comprehensive data analysis exercise within the scope of the PoliVisu project (i.e. new methods of visualisations, mapping etc. This is described more in detail in the next activity).

Brainstorm Student Housing (Internal)

This activity aims to build upon the initial data analysis exercise conducted by Ghent in order to elicit techniques for scoping Gent’s student population using the PoliVisu playbox. Such techniques will employ big data analysis methods to define behavioural and/or usage patterns. Data sources may include social media analysis, mobile data analysis, water and electricity usage, sensor data. More details about the data usage for each pilot in each iteration is provided in deliverable 6.2, the baseline analysis. The involved stakeholders for this activity are the civil servants (who will guide the brainstorm session), the housing department (ideation) and some of the PoliVisu (technical) partners. The goal is to have at least 10 participants to this brainstorm session (5 civil servants, 5 PoliVisu partners) in order to generate and define feasible and replicable techniques that will allow the scoping of Gent’s student population with the use of big data sources.

Table 7 Planning first iteration in Ghent

Activity	Description	Output	Timing	Participants
Work group	Student Housing Data Analysis	Combining the existing datasets with the data collected from the living department of the city	April/May 2018	NA
Investigation	Field Investigations	A real-world assessment of student housing is done of a sample of buildings (min. 9000).	June/July 2018	NA
Focus group	Presentation of Student Housing results	Creating a clear buy-in for a new and more comprehensive data analysis exercise.	September 2018	Min. 10
Focus group	Brainstorm Student Housing (Internal)	Building upon the initial data analysis exercise conducted by Ghent in order to elicit techniques for scoping student population using the PoliVisu playbox	October 2018	Min. 10

5.1.3. Next steps

In the next iterations, the city will apply the knowledge gained in the first iteration to the domain of mobility and economy. Hopefully, the city will be able to re-use the technical components (mostly analysis methods and data) for a large part as well.

- In iteration 2, the conclusions and data from the first iteration can be combined with existing traffic simulation models, thus making it possible to analyse the impact of the ‘hidden’ student population group on the mobility. While the main focus of the second iteration will be on mobility, the student housing topic remains important too. In the second iteration, the conclusions of the first iteration will be used as a starting point for policy focus groups, which will lead to policy co-creation and evaluation in later stages of the project, respectively iteration 3 and 4.
- Iteration 3 will be mainly about the impact of the ‘hidden’ student population on the economical activities in the city centre. As in the previous iteration, the other topics (housing and mobility) won’t be neglected. For the mobility topic, policy focus groups will be organised with the involved stakeholders (Mobility Company, civil servants, students themselves). Due to the fact that this is an open iteration, other activities can be organised as well. For example, the city can organise so called data dives (present the available datasets, show possibilities with the data, interactive discussions...) with the so-far (created) available datasets.
- In the last iteration, Ghent will examine the three potential overlaps between the domains (economy, mobility and housing). For the housing topic (and, if possible mobility topic), Ghent wants to make the first policy evaluations, in which the city hopes to show the effect of big data on policy decisions.

The ambition of the pilot is to tackle these domains of housing, mobility and economy subsequently. In each policy experimentation cycle, Ghent wishes to study the effects of this “hidden population” on these aspects of society.

Table 8 Iteration vs scenario goals in Ghent

Iteration/Scenario	Student Housing	Student Mobility	Student Economy
1 (closed)	<ul style="list-style-type: none"> ● data analysis 	<ul style="list-style-type: none"> ● data analysis ● traffic simulation (as is) 	<ul style="list-style-type: none"> ● Not concerned
2 (lab)	<ul style="list-style-type: none"> ● validation of results ● policy focus groups 	<ul style="list-style-type: none"> ● student traffic simulation 	<ul style="list-style-type: none"> ● data analysis
3 (open)	<ul style="list-style-type: none"> ● policy co-creation 	<ul style="list-style-type: none"> ● policy focus groups 	<ul style="list-style-type: none"> ● validation of results
4 (impact)	<ul style="list-style-type: none"> ● policy evaluation 	<ul style="list-style-type: none"> ● policy co-creation 	<ul style="list-style-type: none"> ● policy focus groups

5.2. Pilsen

5.2.1. Description

Pilsen tries to be Smart city in all areas, including transport. A number of decision-making policies have been defined in this area, notably the « Sustainable Mobility Plan ». The goal is to create tools, which can support these decisions. At all stages of the Policy making cycle – at the stage of identification of problem phenomena, at the stage in the search for appropriate provisions and, of course, at the stage of verification of their impacts.

At the beginning of this PoliVisu project, Pilsen have defined scenarios that require the creation of new tools/applications as well as the acquisition and involvement of relevant data sources. The living lab plan will take advantage of the different types of activities. By choosing an appropriate activity Pilsen want to achieve all goals.

5.2.2. First iteration

In the first iteration, it is important to provide the basic assumptions for allowing further phased steps. This is in particular the obtaining of data from traffic detectors, which will, among other things, improve the transport model. Already in this stage Pilsen want to design the functionality of future applications in terms of functionality and appearance. Therefore, during this period, meetings with technical partners within specialized groups will take place more often, to agree on real technical possibilities or to prepare demonstrations on data samples.

Functional analysis - Definition of tools and visualisation features

By functional analysis the future application will be designed as most detailed as possible. Discussions with technical partners will determine which features can be created and processed. On the other hand, the unrealistic requirements will be eliminated. Needed data will be defined, whether they are available, and whether they can be processed. Pilsen will consider whether it will be a single web application with different looks and approaches or separate applications. The subject of analysis will of course be the design of the application appearance. The proposed deadlines will be important for further steps.

This workshop will involve mainly the technical partners of the project.

Pilsen will work to co-design its tools and visualisation, through internal tests of designed application will take place continually once its sub-modules or functions are implemented.

Workshop - data from traffic detectors

This workshop will address the issue of the basic data source for the project – data from traffic detectors. Their storage and modification to understandable form will be consulted. For their availability on the Open Data portal of the City of Pilsen, their downloadable forms will be discussed and assessed considering their large volume. It will be chosen whether online data will be freely available also in the form of an API. In relation to GIS, the identification and location of detectors will be up to date. Possibilities of their presentation in the form of Heatmap will be considered.

This workshop will involve different stakeholders, such as:

- Technical partners
- Representatives of the SVSmP² - as the operator of the traffic exchange and user of these data)

Pilsen will work to co-design its tools and visualisation, making possible also to define a clear planning i the its development, the pilot will then obtain feedbacks through:

- Verify their availability, for example, in the GIS of the city.
- Response Rate Testing – in the GIS and the Open data portal.
- Server load in the case of an API. Setting data download monitoring.

Workshop - a presentation of Heatmaps technology

The subject of this workshop will be a presentation of Heatmaps technology in conjunction with interactive charts. Its functionality will be shown on a sample of data coming directly from the city. It can be discussed what can be gained from these maps for information and how they can be improved. Users' views will be collected. The use of Heatmaps will be discussed not only in the field of transport. Maybe other data would be incorporated into this technology.

This workshop will involve different stakeholders, such as:

- Technical partners of PoliVisu
- representatives of SVSmP
- Municipal Police

Pilsen will work to co-design its tools and visualisation, making possible also to define a clear planning of the development, the pilot will then obtain feedbacks through:

- Functions and Response Speed testing
- Limit number of processable elements
- Feedbacks on usability

Co-creation/design workshop - improving the transport model

In this workshop Pilsen will work on improving the transport model – another cornerstone for the planned application. Its bi-directionality in particular will be introduced, and its positioning refinement is in plan too. It will also be essential to link it to traffic detector data so that it can be calibrated and verified its behaviour. So the necessary data and processes leading to the goal will be defined. The processes for updating it will be solved too.

This workshop will involve different stakeholders, such as:

² SVSmP - “Správa veřejného statku města Plzně” - organization for the management and maintenance of the publicly accessible property of the city

- Technical partners of PoliVisu (about 5 participants).
- Representatives of SVSMP - 2-3 workers from Concept and Transport Engineering Section - Transport Survey Department (users of software for traffic modelling - CUBE, workers with traffic light signalization and traffic control panel).

Pilsen will work to co-design its tools and visualisation, making possible also to define a clear planning in its development, the pilot will then obtain feedbacks through:

- Features and Response Speed testing
- Testing behaviour in the application
- These tests are expected to be performed in the parallel developed application or at least in delivered test environment:
 - o It will be measured time required for re-computing situation in a case of closure/multiple closures.
 - o It will be discussed relevance of resulted output.
 - o Traffic model will be compared to street net layer.

Table 9 Planning first iteration in Pilsen

Activity	Description	Output	Timing	Participants
Functional analysis	Definition of tools and visualisation features	To assess the real and achievable requirements. This analysis will drive the definition of the further steps and the determination of time requirements.	May 2018	NA
Workshop	Data from traffic detectors	Getting acquainted with the existing form of data and the possibilities of its storage. Finding a way to present them in Opendata. Specify any API.	June 2018	About 10
Workshop	A presentation of Heatmaps technology	Define the technology (also interactive charts), the new data for processing, demonstrate interest in deploying technology and consultation about the possible achievements.	June 2018	About 10
Co-creation/design workshop	Improving the transport model	Create a high-quality traffic model. Ensuring its continuous up-to-date.	September 2018	About 10

5.2.3. Next Steps

In the first iteration, the basics for work in subsequent cycles should be laid and defined. Using the form of a focus group or workshop will continue. The composition of the participants will evolve towards higher involvement of civil servants. In the final, the results will be presented to representatives of the city and the public.

According to definitions and possibilities obtained from the technical partners in opening phase, first versions of visualizations and developed tools will be tested in the second iteration phase. The first results of the cooperation will be seen. Basic testing related to verification of functionality, response speed, and usability will be performed. There will also be invited the key officers from departments of the Municipality of Pilsen to participate in workshops, where they can make their views in the form of comments/discussion.

Next iteration will be aimed to a more open group of relevant city workers. Again, mostly in the form of workshops, but for a broader group of civil servants, feedbacks and comments will be gathered. Almost complete tools and applications containing full data and in real city environment will be presented and tested. Pilsen also want to get a wider awareness of the upcoming tools in the MMP³ surroundings before their official final stage presentations.

Table 10 Iteration vs scenario goals in Pilsen

Iteration/Scenario	Efficient traffic planning and prediction	Current city traffic	Predicting roadworks for better coordination	Big data analysis and outputs
1 (closed)	<ul style="list-style-type: none"> ● Data analysis ● Definition of needs ● Validation of scenario 	<ul style="list-style-type: none"> ● Data analysis ● Definition of needs ● Validation of scenario 	<ul style="list-style-type: none"> ● Data analysis ● Definition of needs ● Validation of scenario 	<ul style="list-style-type: none"> ● Data analysis ● Definition of needs ● Validation of scenario ● Lab scenario deployment
2 (lab)	<ul style="list-style-type: none"> ● Improvement of tools ● Lab scenario deployment 	<ul style="list-style-type: none"> ● Improvement of tools ● Lab scenario deployment ● Validation of improved tools 	<ul style="list-style-type: none"> ● Improvement of tools ● Lab scenario deployment 	<ul style="list-style-type: none"> ● Improvement of tools ● Lab scenario deployment ● Validation of improved tools
3 (open)	<ul style="list-style-type: none"> ● Validation of improved tools 	<ul style="list-style-type: none"> ● Real scenario deployment 	<ul style="list-style-type: none"> ● Validation of improved tools 	<ul style="list-style-type: none"> ● Improvement of tools

³ MMP - "Magistrát města Plzně" - The municipality of Pilsen

Iteration/Scenario	Efficient traffic planning and prediction	Current city traffic	Predicting roadworks for better coordination	Big data analysis and outputs
	<ul style="list-style-type: none"> Real Scenario deployment 		<ul style="list-style-type: none"> Real Scenario deployment 	<ul style="list-style-type: none"> Validation of improved tools Real scenario deployment
4 (impact)	<ul style="list-style-type: none"> Evaluation of final tools Use in policy making 	<ul style="list-style-type: none"> Evaluation of final tools Use in policy making 	<ul style="list-style-type: none"> Evaluation of final tools Use in policy making 	<ul style="list-style-type: none"> Evaluation of final tools Use in policy making

The final stage will be primarily about presenting tools. After final verification, all parts of this solution will be officially presented – to the public and media. Of course with the possibility of collecting feedback for further editing. The tools will be officially presented to city representatives too. They are also expected to support the involvement of new tools in the city's decision-making process. Decision makers should start to use this tool for their policy making or to evaluate realised provisions in traffic.

5.3. Issy-les-Moulineaux

5.3.1. Description

Since the early 90's, The City of Issy-les-Moulineaux has developed a proactive policy to build a local information society, innovative and inclusive, and which led the City to shift from a post-industrial to a digital-oriented town showing high indicator of wealth. The strategy adopted is to follow the developments of new technologies benefiting the population across the country but also to implement, stimulate and foster innovation in the City.

By creating a collaborative environment bringing together the public, the private and the research sector, Issy has developed a “reflex of innovation” studying and experimenting everything that could potentially contribute to improve the life of Issy's inhabitants or the development of the local economy.

5.3.2. First iteration

To start to introduce PoliVisu in local ecosystem, the first iteration in Issy will be focused on participatory design, based on a workshop and 2 focus group activities with three different stakeholders involved in Issy scenarios:

- Public servants (communication, mobility and urbanism);
- companies and start-ups, mainly involved in the local So Mobility project;
- final users of transports and mobility services (citizens, students...).

The aim of this first iteration is to start introducing to Issy's ecosystem but also to capture feedback, suggestions of changes, first platform uses foresights.

It was decided to have these activities with different stakeholders, to capture feelings of users on help received from tools using data in policy making.

The idea of involving various stakeholders is defined to allow to have feedbacks taking into account different possible points of view and uses, allowing the project technical team to have clear instructions on tools to be built and to have a first feedback about the first components development already in progress.

Due to the phase of the project, the 3 activities will be conducted on a closed user group, mainly recruited internally or in the closed network of Issy (i.e. So Mobility project, the local urban agglomeration, a local think tank).

To make these activities more effective, particularly for a qualitative evaluation, fundamental in this phase of the project, it has been defined to work on small groups (2 groups of 5 people and one of 10 for the workshop). All these activities will be conducted using some simple gamification techniques.

Focus Groups

2 focus groups will involve about 10 people (2 groups of 5), in an open discussion mode. The composition of the groups will be made trying to mix the different type of stakeholders up, allowing to aggregate different uses and points of view and making the brainstorming more effective. This activity will be divided in 3 phases:

- introduction and explanation of the context (project and Issy scenario);
- demonstration of the components and tools with interaction with the participants;
- final brainstorming on the importance (and impact) of these tools on policy making.

The second and the third phase of this activity will be focused on an open discussion with participants, but in the second one this will be driven through the demonstration proposing different alternatives. The participants will have to choose one of the options proposed every time and to explain the reason of their choice, according to their different perspective. This should allow to have not just feedbacks about usability, but also on usefulness/adaptability on policy making.

The results will be analysed and sent to the technical team to be taken into consideration in the development of the different visualisations and tools.

Co-design Workshop

Issy will organise a workshop in September 2018, following the 2 focus groups held before the summer break.

This activity will involve about 10 people, following the structure of the focus groups, in an open discussion mode.

The composition of the groups will be made trying to mix the different type of stakeholders up, allowing to aggregate different uses and points of view and making the brainstorming more effective.

This activity will be divided in 3 phases:

- introduction and explanation of the context (project and Issy scenario);
- explanation of findings, followed by an interaction with the participants;
- final brainstorming on the importance (and impact) of these tools on policy making.

The second and the third phase of this activity will be focused on an open discussion with participants, but in the second one this will be driven through demonstrations proposing different alternatives (showing the updated version of the tools and a first mock-up of the results of the propositions of the focus groups).

The participants will have to choose one of the options proposed every time and to explain the reason of their choice, according to their different perspective. This should allow to have not just feedbacks about usability, but also on usefulness/adaptability on policy making.

The results will be analysed and sent to the technical team to be taken into consideration in the development of the different visualisations and tools. This activity will allow also to confirm that the work done following the focus groups is moving in the right direction, allowing to move forward to develop the tools/visualisations to be proposed later on.

Table 11 Planning first iteration in Issy-les-Moulineaux

Activity	Description	Output	Timing	Participants
Focus Group	Information and Communication	Definition of needs of communication managers and related teams in terms of visualisations/tools and policy making tools	June 2018	5
Focus Group	Urbanism and mobility	Definition of needs of urban designers, managers and civil servants working on mobility field in terms of visualisations/tools and policy making tools	July 2018	5
Co-design workshop	European Mobility Week workshop	Proposition to the public the findings of the first two focus groups with some examples to allow to have feedbacks about those and confirm them before a real development of the technical team.	September 2018	10

5.3.3. Next Steps

Following the first iteration, Issy will better define the precise strategy for the next cycles, also taking into consideration the results of the iteration, but a first framework for recruitment and evaluation is defined to give continuity and consistency to iterations after the first cycle.

Leaning on the lessons learnt during the first iteration, Issy will work on the following 3 iterations on a Living Lab methodology designed on various steps, accordingly to the project overall plan:

- Iteration 2: organisation of the first tests with an open group, but in a lab environment to allow to validate and improve the tools of the project and particularly the role that those may have to improve policy making in transports and mobility.
- Iteration 3: organisation of the tests with an open group in real life conditions to definitely validate the tools of the project and suggest any final improvement, with a focus on their role on policy making.
- Iteration 4: a final proof of concept with all the tools developed by the project, allowing to show how these can have a real impact in use of data for policy making.

This plan is defined to allow to improve the solutions iteration by iteration, to this end the various stakeholders will be involved on an “increasing scheme”. This scheme will make possible to start working on solutions with the most motivated users first and to open it to the people with a potential interest and a more cautious approach later on, proposing them better designed and complet tools, reducing in this way any possible drop-out effect of users.

Table 12 Iteration vs scenario goals in Issy-les-Moulineaux

Iteration/Scenario	Traffic management	Information and communication
1 (closed)	<ul style="list-style-type: none"> ● Data analysis ● Definition of needs ● Definition of approach (policy making) ● Validation of scenario 	<ul style="list-style-type: none"> ● Data analysis ● Definition of needs ● Definition of Big Data (policy making) ● Validation of scenario
2 (lab)	<ul style="list-style-type: none"> ● Improvement of tools ● Improvement of approach in policy making ● Lab scenario deployment 	<ul style="list-style-type: none"> ● Improvement of tools ● Improvement of approach in policy making ● Lab scenario deployment
3 (open)	<ul style="list-style-type: none"> ● Validation of improved tools ● Validation of approach in policy making ● Real Scenario deployment 	<ul style="list-style-type: none"> ● Validation of improved tools ● Validation of approach in policy making ● Real scenario deployment
4 (impact)	<ul style="list-style-type: none"> ● Evaluation of final tools ● Evaluation of final policy making approach 	<ul style="list-style-type: none"> ● Evaluation of final tools ● Evaluation of final policy making approach

6. Conclusion

PoliVisu uses a double evaluation methodology based on formative and summative methodology. This is defined to allow to measure and document achievements and outcomes of the project as a whole (summative) and the progress and the outcomes of the pilot cities (formative).

This will be driven through four iterations based on an increasing strategy, allowing to make the number of the participants, the openness of living lab activities and the application of the policy making model larger and larger. To monitor the progress and possible barriers or delays, it has been defined a double framework of KPIs at project and pilot levels to allow to detect any needs at project and/or pilot level.

To this end, pilot cities will be supported by this work package and the 3 others having a role in evaluation activities (WP3, WP4, WP5, WP6 and WP8) to allow them to have the evaluation, engagement/communication and digital/technical tools necessary to succeed with their objectives. In parallel, this effort will be useful to allow the project to reach its own, being those strictly related to a living lab strategy.

Taking into consideration the nature of the project and its co-creation-based structure, the pilot operation plan is structured on a consolidated framework with a detailed planning defined at the end of every iteration (and reported in the deliverable done at the end of every cycle) to make possible to define them according to the feedbacks about the policy making model and the technical development of the tools/visualisations.

On this basis, the first two iterations will mainly focus on the co-design of the tools and the policy making model, while the third one will validate them and the last one will allow to work on a final validation, the definition of a clear and solid business plan and the deployment of the policy making model and tools/visualisations in, at least, 3 followers cities.

7. References

Ståhlbröst, A. and Hols, M. (2015). The Living Lab Methodology Handbook. Plan Sju kommunikation AB.

Wholey J.S. (1996) Formative and Summative Evaluation: Related Issues in Performance Measurement. American Journal of Evaluation, 17(2), 145-149.

Tessmer M. (2013) Planning and conducting formative evaluations, Taylor Francis

Annex 1 - Instructions for use of feedback form



Instructions for feedbacks

At the end of every activity, at the latest a week after the actual deployment of it, the responsible partner will have to:

- *open the “Feedback collection” folder on [drive](#)*
- *choose the right iteration*
- *choose your pilot folder*
- *Create a folder per activity following the model available [here](#), completing name and date in title¹*
- *complete a feedback form using the “Pilot activities form” available on [drive](#) and upload it on activity folder*
- *Upload pictures (at least 3) showing the actual realisation of it (in the dedicated folder per activity)*
- *Upload any feedbacks (surveys, notes, outputs of any kind) in the dedicated folder per activity*

For any problem/issue or doubt, contact WP7 leader.

Annex 2 - Template of feedback form

Feedback summary - [Insert name of activity]

Iteration [insert number] - [insert name of iteration]

General Information

Date:

Pilot city:

Type of activity (refer to [D7.1](#)):

Moderator of the session:

Overview of the activity

Please describe here the activity with a short text describing:

- *Objectives/expectations of the activities*
- *Recruitment channels*
- *programme of the activity*
- *Expected output*

[Please try to limit this to not more than half of a page]

Results of the activity

Please describe here the results of the activity, explaining:

- *Actual recruitment channels used (incl. numbers)*
- *Results vs. expectations*
- *Results vs. success criteria*

Participation table

Fill a table using this example

Name	Description	Result	KPI	Result vs. KPI
<i>Recruitment</i>	<i>Number of people invited (specify channel and)</i>	<i>11</i>	<i>NA</i>	<i>NA</i>
<i>Participants</i>	<i>Number of participants</i>	<i>11</i>	<i>10</i>	<i>110%</i>

<i>Feedbacks</i>	<i>Number of feedbacks</i>	9	10	90%
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Feedback table

Fill a table using this example

Name	Description	Result	KPI	Result vs. KPI
<i>Datasets</i>	<i>Number of useful datasets identified</i>	15	15	100%
<i>Datasets</i>	<i>Number of used datasets⁴</i>	15	15	100%
<i>Policies</i>	<i>Number of policies explored</i>	7	7	100%
<i>Policies</i>	<i>Number of successful policies⁵</i>	0	2	0%
<i>Users</i>	<i>Number of engaged users⁶</i>	5	20	25%
<i>Users</i>	<i>Number of engaged stakeholders</i>	3	20	15%
<i>Users</i>	<i>Number of needs identified</i>	5	NA	NA
<i>Users</i>	<i>Number of needs satisfied⁷</i>	3	100%	-40% ⁸
<i>Interviews</i>	<i>Number of users interviewed</i>	2	7	30%
<i>Tools</i>	<i>Number of visualisations created⁹</i>	1	5	20%
<i>Tools</i>	<i>Number of comments received</i>	5	NA	NA
<i>Tools</i>	<i>Number of bugs identified</i>	3	NA	NA
<i>Tools¹⁰</i>	<i>Acceptance (%)</i>	60%	80%	-20%

⁴ Doesn't apply to closed iteration

⁵ Doesn't apply to closed iteration

⁶ External (i.e. not in your organisation or in the project) users giving a positive feedback and accepting to participate to future

⁷ Doesn't apply to closed iteration

⁸ This is calculated as $[(\text{number of needs satisfied} - \text{number of identified}) / \text{number of needs identified}] * 100 - 100\%$

⁹ Might not apply to closed iteration

¹⁰ Doesn't apply to closed iteration

<i>Tools</i> ¹¹	<i>Satisfaction (%)</i>	<i>80%</i>	<i>90%</i>	<i>-10%</i>
<i>Model</i> ¹²	<i>Acceptance (%)</i>	<i>60%</i>	<i>80%</i>	<i>-20%</i>
<i>Model</i> ¹³	<i>Satisfaction (%)</i>	<i>80%</i>	<i>90%</i>	<i>-10%</i>

Insight on feedbacks of the activity

Please describe here the feedbacks received, highlighting in particular :

- *Participants profile insight*
- *Insight on feedbacks received (incl. crossing them with profiles)*
- *Lessons learnt by:*
 - *participation*
 - *users*
 - *tools*
 - *policies*
 - *model*
- *Improvements needed for following activity and/or iteration*

Technical Feedback table

Please give to the technical team all useful information to create and/or refine tools and visualisations

Name ¹⁴	Description	Screenshot (if applicable)	Priority
<i>Bug</i>		<i>Link</i>	
<i>Other issue</i>		<i>Link</i>	
<i>New functionality</i>		<i>Link</i>	
<i>Improvement</i>		<i>Link</i>	

¹¹ Doesn't apply to closed iteration

¹² Doesn't apply to closed iteration

¹³ Doesn't apply to closed iteration

¹⁴ Please use a line per bug, issue, functionality and/or improvement