Evaluation and assessment of pilots

Deliverable D6.4 :: Public

Keywords: Evaluation, Assessment, Pilots evaluation, User groups

Linked Open Data for environment protection in Smart Regions
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Executive Summary

This document describes the results of the activities focused on the evaluation of pilot use cases from the user groups perspective carried out in WP6 (Evaluation, Assessment and User groups) of the SmartOpenData project. Main goal of such evaluation activity is to assess the quality of the developed pilots and verify whether their level meets their specified objectives. Another important objective of this activity was to collect the feedback on the developed pilots via interaction with the internal and external user groups represented by the relevant stakeholders.

In WP6, two evaluation phases were carried out in the project and will be analyzed in this document: an internal evaluation, involving internal user groups representing participants from the main project partners, and an external evaluation, involving external user groups participants of pilot users.

For both evaluations, the document first summarizes the approach used in carrying out the evaluation and its goals. Then, it presents the results of the data collection activity and analyzes its outcomes, possibly by providing comments for the progress in the development of pilots. This version of the deliverable documents the final results and assessment of the internal and external evaluation of the pilots.
1 Introduction

In this deliverable we will present the results of the evaluation activities for the assessment of use cases pilots, in the context of the WP6 assessment activities. The goal of the presented assessments regard the evaluation of the demonstration pilots, while a separate deliverable (D6.5 [2]) is dedicated to the assessment of the SmartOpenData infrastructure.

Main objective of the SmartOpenData pilots was to demonstrate the deployment of the components developed during the project lifetime in practice.

The evaluation processes described in this document are aimed at providing results that can be used both to measure the level of achievement of the previously defined objectives of the pilots, but also to identify the criticalities in each pilot in need of further refinement.

As we will detail in next sections, two evaluations were carried out: an internal evaluation, performed inside the partners consortium, and an external evaluation, involving external user groups and networks. This choice allowed to first verify the quality of SmartOpenData outcomes (and evaluation materials) within the partners and then to receive a final feedback from external users. The evaluation approach has been defined in previous deliverable D6.1 [1].

The document is basically structured around these two evaluations. In Section 2 we will detail the approach, results and assessment for the internal evaluation, while in Section 3 the same kind of analysis is presented for the external evaluation. For both evaluation rounds we will analyse the data with respect to each single pilot and then compare the results by aggregations. Finally, in Section 4 we will conclude by comparing the results of both evaluations.

1.1 Evaluation process

In this section we will shortly summarize the plan of activities that has been carried out in WP6 for the evaluation of the SmartOpenData outcomes. A precise plan of activities and further details about the execution of each step will be presented in the dedicated deliverable D6.3 [4]. The evaluation process basically followed these activities:

A1. Evaluation plan: during this activity the WP6 partners defined the methodology (i.e. the steps and the metrics) and the plan for the evaluation activities. This activity ran from M7 to M9 with FBK as the main responsible partner. The outcomes of this activity are documented in deliverable D6.1 [1].

A2. User groups setup and analysis: the partners identified the set of internal and external user groups for the execution of the evaluation. This activity ran from M7 to M9 with SAZP as the main responsible. This activity is reported in deliverable D6.2 [5].

A3. User groups maintenance: in this activity the WP6 supported the execution of the evaluation activities by helping the involved partners in the establishing of user groups and by providing the communications and materials essential to the development and execution of evaluation activities and events. This activity ran from M10 to M24 with SAZP as the main responsible partner. The outcomes of this activity are documented in deliverable D6.3 [4].
**A4. Evaluation and assessment of pilots:** In this activity the WP6 partners considered the results of the (internal and external) evaluation activities carried out in the context of previous task and provided with an assessment of their outcomes relative to the demonstration pilots developed in WP5. This activity ran from M10 to M24 and FBK was the main responsible. The present deliverable D6.4 reports the outcomes of this activity.

**A5. Evaluation and assessment of SmartOpenData infrastructure:** Similarly to previous activity, in this step the partners assessed the outcomes of the internal and external evaluation activities with respect to the SmartOpenData infrastructure and data developed in WP5. This activity ran from M10 to M24 with TRAGSA as the main responsible partner. Deliverable D6.5 [2] documents this activity.
2 Internal evaluation

The internal evaluation aim is to provide an early feedback on the first version of SmartOpenData model, infrastructure and pilot use cases. Such feedback can be then used by developers in order to refine their implementations and work towards their expected (and user perceived) quality levels.

In the following sections we will summarize the intended goals and approach used in this iteration of the evaluation.

2.1 Evaluation goals and approach

The overall goal of the internal evaluation was to collect early feedback about the results of the project from the point of view of internal reviewers from the project partners: the assessment of collected results permits to improve the elements of the project before exposing them to the evaluation from external reviewers and users.

In general, the goal of the evaluation is to provide feedback over the developed resources quality and overall SmartOpenData architecture usefulness. More in detail, as defined in deliverable D6.1 [1], the main elements that have to be addressed by the evaluation are:

- The quality of the open data resources and the suitability of the Linked Open Data model and Geospatial Information;
- The facilities provided by the SmartOpenData consortium to access existing services and resources in the SmartOpenData project;
- The SmartOpenData Demonstration Pilot. Its usefulness and features exposed to all the target groups. This obviously includes several roles and sections of the pilots.

The different user groups identified in D6.1 [1] (spec. general public/final users, data resource providers and data service developers) will provide different feedback on their area of interest about the platform. Moreover, the metrics and element specific evaluation points defined in D6.1 [1] have to be taken in to account in the definition of the evaluation implementation.

Taking into account the definition of such goals and aspects, the instrument that has been chosen for the execution of the internal evaluation was an on-line survey. The developed survey involves (consistently to what has been defined in deliverable D6.1 [1]) both open-ended questions and multiple choice or yes/no questions: the questions are aimed at verifying the different assessed dimensions and they are divided in several sections corresponding to the addressed evaluation point. The version of the questions that has been used in the internal evaluation (divided by sections) can be found in Annex A.

The survey has been distributed to the internal evaluators: internal evaluators were previously identified by the partners involved in the evaluation process and organized in internal user groups.

In order to ensure essential input from the internal survey and, in particular, to be sure to have a satisfactory number and distribution of responses addressing the different parts to be assessed, we have prepared an assignment of the evaluation by the partners. In the
following Table 1 we show, for each of the involved partners’ number of expected responses and the parts of the platform to be taken into account: in the table, partners with colored lines had direct commitment in WP6 evaluation tasks.

<table>
<thead>
<tr>
<th>Infrastructure</th>
<th>Pilots to evaluate</th>
</tr>
</thead>
<tbody>
<tr>
<td>P1: TRAGSA</td>
<td>X</td>
</tr>
<tr>
<td>P2: UPM</td>
<td>X</td>
</tr>
<tr>
<td>P3: MAC</td>
<td>X</td>
</tr>
<tr>
<td>P4: Sindice</td>
<td></td>
</tr>
<tr>
<td>P5: MWRA/LCCA</td>
<td>X</td>
</tr>
<tr>
<td>P6: ARPA</td>
<td></td>
</tr>
<tr>
<td>P7: FBK</td>
<td>X</td>
</tr>
<tr>
<td>P8: SpazioDati</td>
<td>X</td>
</tr>
<tr>
<td>P9: HSRS</td>
<td></td>
</tr>
<tr>
<td>P10: FMI</td>
<td>X</td>
</tr>
<tr>
<td>P11: CCSS</td>
<td>X</td>
</tr>
<tr>
<td>P12: SINTEF</td>
<td></td>
</tr>
<tr>
<td>P13: IMCS</td>
<td></td>
</tr>
<tr>
<td>P14: DGT</td>
<td>X</td>
</tr>
<tr>
<td>P15: SAZP</td>
<td>X</td>
</tr>
<tr>
<td>P16: ERCIM/W3C</td>
<td></td>
</tr>
</tbody>
</table>

*Table 1: Internal evaluation assignments*

With the goal to facilitate the evaluation of the pilots, we provided to the partners a support document in the form of an on-line working document: the document briefly presented, for each of the pilots, its initial requirements, the criteria for evaluation, a brief description on how to use the pilot and its evaluation measures. The refinement and final version of this document will then be used as a base for the support material in the external evaluation.

The internal survey data collection period run from 27/06/2015 to 24/07/2015. We received a total of 36 responses from 11 partners: in the following we will detail how they were distributed and we will further analyze the insights that they provide.

This document analyzes the results concerning the evaluation of demonstration pilots. In document D6.5 [2] will assess the results relative to the SmartOpenData infrastructure.

### 2.2 Evaluation results

In the following sections we will report the results obtained for the execution of the internal evaluation, i.e. the results collected using the internal survey from the project partners.

First of all, we will report the dimensions of the user demographics of the participants.
Figure 1: Distribution of participants by country

Figure 2: Distribution of participants by organization

Figure 3: Distribution of participants by sector
All of the participants of the internal evaluation are involved in the realization of the project: so the most interesting measure to distinguish the participants to the survey regards their involvement as either architectural developer/modeler or developers/users of the pilots: we will use this distinction in analyzing the evaluation they provided on the different parts of the architecture and pilots.

From these results, we can note that, as expected, most of the answers came from survey participants that identified themselves as *Pilot* or *Infrastructure developers* (while, in the evaluation of particular elements of the model, they identified themselves as *Pilot* or *Infrastructure Users*).

About the demographics of the survey participants, by combining the table of assignments with the result of Question 7 (Participant category) and Question 8 (Role category in the project), we can verify that some of the organizations/individuals often chose several roles in responding to such questions in different sessions of the survey: since the same participants have been asked to evaluate different parts of the architecture, this can be interpreted as a way to provide different point of view as a developer or user for the evaluated element. In the subsequent analysis of such data, we will also try to establish some correlation across these demographical information and the evaluations provided for the pilots.
In the following we will distinguish the specific results evaluating the pilots by the pilot which they referred to: in the last subsection we will then aggregate these results in order to compare their overall perceived effectiveness.

2.2.1 Pilot specific results

In following subsections we report the results of the evaluation of each pilot in the survey. This corresponds to provide the results of the pilot specific evaluation section of the survey by distinguishing which pilot was evaluated. Further considerations about the results of specific pilots will be then provided in Section 2.3.

The questions regarding this aspect are shown in the following Table 2 (divided by their section).

<table>
<thead>
<tr>
<th>Understanding its value I:</th>
<th>Understanding its value II:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Does the SmartOpenData infrastructure or its pilots...</td>
<td>Does the SmartOpenData infrastructure or its pilots...</td>
</tr>
<tr>
<td>44. Help you get a job done?</td>
<td>50. Put an end to difficulties and challenges you have encountered?</td>
</tr>
<tr>
<td>45. Create savings that makes you happy?</td>
<td>51. Eliminate risks you fear?</td>
</tr>
<tr>
<td>46. Produce outcomes you expect or that go beyond your expectations?</td>
<td>52. Eliminates common mistakes you make?</td>
</tr>
<tr>
<td>47. Copy or outperform current solutions that delight you?</td>
<td>53. Help you to avoid barriers that are keeping you from adopting solutions?</td>
</tr>
<tr>
<td>48. Make your job or life easier?</td>
<td>54. Would you use this product?</td>
</tr>
<tr>
<td>49. Do something you are looking for?</td>
<td>55. Would you pay for it?</td>
</tr>
</tbody>
</table>

Table 2: Pilot related questions in internal survey

We report here the distribution of responses we had for each pilot, corresponding to the results of Question 30 (Selection of the pilot).

![Figure 6: Pilot selection](image)

1. Spain and Portugal (Agroforestry Management).

The Spain and Portugal pilot had a total of 17 evaluations. In Figure 7 we summarize as a chart the results of the specific questions regarding this pilot.
In general, the pilot was evaluated positively: 73.53% of the answers are positive. The most appreciated aspects are about usefulness of the pilot (Question 44), expected outcomes (Question 46) and recommendation of the tool (Question 54) each with 94.1% of positive answers. On the other hand, the aspect which received the most negative feedback is about the ability of the pilot to eliminate risks (Question 51) with 47% of negative answers.

2. Ireland (Research and Biodiversity).

The Ireland pilot had a total of 4 evaluations. We report in Figure 8 the chart showing the results of the specific questions regarding this pilot.

As can be noted, the pilot was in general evaluated positively with 68.75% of positive answers. The most appreciated aspect of the pilot regarded its capability to confront with existing solutions (Question 47) and recommendation of the tool (Question 54) with 100% of positive answers. The aspects in which the pilot scored less (by receiving 50% of positive and
negative answers) are about its capability to reduce current effort, risks, mistakes and barriers (Questions 50-53) but also in its market appeal (Question 54).

3. Italy (Water Monitoring).

The Italy pilot had a total of 5 evaluations. In Figure 9 we summarize the results of the questions regarding this pilot.

![Figure 9: IT Pilot results](image)

The pilot was evaluated positively in most of the questions: 83.33% of the answers are positive and, as can be seen from the graph, all questions were evaluated positively in more than the 50% of the cases. The more valued aspects of the pilot (with 100% of positive answers) regarded its usefulness (Question 44), expected outcomes (Question 46), advantages over existing solutions (Question 47) and recommendation of the tool (Question 54). The aspects which received less appreciation (however, scoring 60% of positive answers) regarded the novelty of the tool in eliminating risks, mistakes or limits from current practice (Questions 51-53). We note that further feedback on the Italy pilot came from the open questions (cfr. Annex A) mostly with respect to its usage of the SmartOpenData model and the current usability of the interface.

4. Czech Republic (Forest Sustainability).

The Czech Republic pilot had a total of 5 evaluations. In Figure 10 we summarize as a chart the results of the specific questions regarding this pilot.
In general, the pilot was evaluated positively; while the average positive responses are lower than other pilots (58.33% of the answers are positive). The pilot was mostly appreciated for its effectiveness (Question 44), expected outcomes (Questions 46 and 49), its capability of reducing current risks (Question 51) and recommendability (Question 54). On the other hand, it was largely recognized (100% of answers) the non-marketability of the pilot (Question 55).

5. Slovakia (Environmental Data reuse).

The Slovakia pilot had a total of 5 evaluations. The chart in Figure 11 summarizes the results of the specific questions regarding the pilot.

The pilot was evaluated positively, with 81.67% of positive answers. The most appreciated aspects (with 100% of positive answers) regard its usefulness and efficiency (Questions 44 and 45), the capability to deliver the expected results (Questions 46 and 49), the capability to prevent from common mistakes (Question 52) and recommendability (Question 54).
Again, the aspect which received more negative feedback (80% of answers) regard the marketability of the pilot (Question 55).

2.2.2 Aggregated results

In this section we aggregate the results for the single pilots over each of the question in Table 2 in order to compare them with respect to these aspects. The aggregate results are proposed in the following graphs.

![Figure 12: Question 44. “Help you get a job done?”](image)

![Figure 13: Question 45. “Create savings...?”](image)
<table>
<thead>
<tr>
<th>Country</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Czech Republic F.</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Ireland Environment</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Italy Water Monitor</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Slovakia Environment</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Spain &amp; Portugal</td>
<td>16</td>
<td>1</td>
</tr>
</tbody>
</table>

**Figure 14:** Question 46. “Produce outcomes...?”

<table>
<thead>
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</thead>
<tbody>
<tr>
<td>Czech Republic F.</td>
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<tr>
<td>Ireland Environment</td>
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<td>1</td>
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<tr>
<td>Italy Water Monitor</td>
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<td></td>
</tr>
<tr>
<td>Slovakia Environment</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Spain &amp; Portugal</td>
<td>12</td>
<td>5</td>
</tr>
</tbody>
</table>

**Figure 15:** Question 47. “Copy or outperforms...?”

<table>
<thead>
<tr>
<th>Country</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Czech Republic F.</td>
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<td>2</td>
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<tr>
<td>Ireland Environment</td>
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<td>1</td>
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<td>4</td>
<td></td>
</tr>
<tr>
<td>Slovakia Environment</td>
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</tr>
<tr>
<td>Spain &amp; Portugal</td>
<td>11</td>
<td>6</td>
</tr>
</tbody>
</table>

**Figure 16:** Question 48. “Make your job or life easier?”
### Figure 17: Question 49. “Do something you are looking for?”

<table>
<thead>
<tr>
<th>Country</th>
<th>No</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Czech Republic F...</td>
<td>3</td>
<td>2</td>
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<tr>
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<tr>
<td>Italy Water Monitor</td>
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<tr>
<td>Spain &amp; Portugal...</td>
<td>4</td>
<td>16</td>
</tr>
</tbody>
</table>

### Figure 18: Question 50. “Put an end to difficulties...?”

<table>
<thead>
<tr>
<th>Country</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Czech Republic F...</td>
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<tr>
<td>Ireland Environm...</td>
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<td>Italy Water Monitor</td>
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<tr>
<td>Slovakia Environ...</td>
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</tr>
<tr>
<td>Spain &amp; Portugal...</td>
<td>9</td>
<td>8</td>
</tr>
</tbody>
</table>

### Figure 19: Question 51. “Eliminate risks...?”

<table>
<thead>
<tr>
<th>Country</th>
<th>No</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Czech Republic F...</td>
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<td>1</td>
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<tr>
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<td>2</td>
</tr>
<tr>
<td>Spain &amp; Portugal...</td>
<td>9</td>
<td>8</td>
</tr>
</tbody>
</table>
Figure 20: Question 52. “Eliminate mistakes...?”

Figure 21: Question 53. “Help avoid barriers...?”

Figure 22: Question 54. “Would you use this product?”
We can give some general results over these aggregated graphs. First of all, the pilots were evaluated positively over the different aspects, with 73.38% of the answers positive.

Overall, the most recognized aspects regard the actual applicability of the pilots (Question 54), with an average of 94.44% of positive answers, their effectiveness (Question 44) and the capability to produce expected results (Question 46), both with an average of 91.67% positive answers. On the other hand, the aspect which received the more negative answers (50% of the answers) is about the possibility to pay (i.e. market) the presented resources (Question 55).

Here we can note that, in comparison, the pilot that scored better overall is the Italian pilot, with 83.33% of overall positive answers. Conversely, the pilot that scored less overall with respect to the others pilots is the Czech Republic pilot, having only the 58.33% of positive answers.

2.3 Results assessment

We can now derive some conclusions from the previously presented results, both in general about all pilots and in particular for each single pilot and question. In general these results can then be useful to the pilot developers to ameliorate and correct the pilots in view of the external evaluation and to verify whether the requested quality of their product meets the expectations of their users.

Before turning our attention to the analysis of pilot results, we notice that some of the final comments (Question 56) provided important opinions and recommendations on the definition of the internal evaluation, which can be useful to enhance the quality of the survey for the external evaluations. In particular, it has been noticed that a yes/no type of answer is limiting in expressing an evaluation on the different aspects; with respect to this it has also been noted that giving the possibility to comment the positive or negative answer to each question could motivate the response and provide further feedback to the architecture and pilot developers. Another point regards the need for a better distinction for the evaluation of the architecture and pilots (currently, the survey required to evaluate a pilot even for infrastructure providers and users). At the same time more visible links between the use of the infrastructure components in the pilots should be evaluated.
We have to remark that the pilot specific metrics that have been defined in D6.1 [1] (based on the objectives for each pilot defined in D5.1 [3]) have not been addressed in this survey, which was mostly oriented in testing the overall features of pilots. Also the internal evaluation represented a first iteration of the survey, which also served as a test for verifying the evaluation model before applying it to the general public in the external evaluation. In the following phases of the evaluation, the survey should be expanded in order to include the results of such pilot specific evaluation. At the same time, request for simplification of the certain parts of the survey, particularly addressing wide external consultation was also identified and later on taken into the consideration during the definition of the surveys for external stakeholders.

We note, moreover, that some of such evaluation points can be quantitatively evaluated only having the effective values and statistics from the pilots usage (e.g. visitor or application users number, as for the Irish pilot or number of datasets in the Slovakian pilot), so they cannot be effectively evaluated using a survey and they should be considered only at the end of the project implementation period (i.e. the end of the evaluation task in October 2015).

The same applies to the quantitative questionnaires about Resources metrics (Section 5.2 in D6.1 [1]), which will allow us to expand the evaluation and provide also aggregated metrics over the different aspects of the pilots, also by providing a more insightful statistical analysis of the results.

Moreover, for a more effective evaluation of the aspects measured by the survey, more refined support material should be provided to the participants: the material should provide a clear demonstration of the possibilities of the pilots, their features and their goals.

For the external evaluation, all relevant stakeholders groups will be addressed with particular focus on the potential to stimulate the utilization of the project outcomes with the support of the Small and Medium Enterprises (SMEs) segment.

### 2.3.1 Pilot specific results

#### 1. Spain and Portugal (Agroforestry Management).

With 17 out of 36 survey responses, the Spain and Portugal pilot was the one which received more input from the partners. As noted above, the evaluation of this pilot has been overall positive (with over 73% of positive answers). The number of architecture/pilot developers evaluating the pilot was 15 and architecture/pilot users were 2. Both type of participants positively evaluated the pilot, with the developers being more positive (75.56% of positive answers) than the users (70.83% of positive answers).

From the results in previous sections, the main perceived strength of this pilot regards its usefulness and consistency with the expected results. On the other hand, the pilot has not been recognized for its capability to solve risks or common mistakes to the problems tackled by the pilot. On the base of such results, the overall feedback that can be delivered to pilot developers should thus be that, while the pilot is recognized to effectively solve the tasks for which it has been developed, it should be better highlighted what are its advantages over existing solutions.
2. Ireland (Research and Biodiversity).

In general, the Irish pilot has been positively evaluated (68.75% of positive answers), but there is room for improvement about some aspects. The number of architecture/pilot developers evaluating the pilot was 2 and architecture/pilot users were in the same number. It is interesting to note that the developers evaluated the pilot with a lower number of positive answers (54.17%) than the users (79.17%).

While it is perceived the value of the pilot with respect to existing solutions, what is not recognized is whether the pilot is able to provide a better solution to prevent from risks and mistakes or to allow a reduction of the user effort. Also it is not understood its market value (which, however, might be justified by the very specific area of interest of the pilot).

Based on these results, the overall suggestion to the pilot developers is to better explain the added value and demonstrate the usefulness and expected results of the application.

3. Italy (Water Monitoring).

The Italian pilot was the most appreciated across all pilots, with 83.33% of overall positive answers. The number of architecture/pilot developers evaluating the pilot was 2 and architecture/pilot users were 3. Both type of participants positively evaluated the pilot, with the developers being slightly more positive (83.33% of positive answers) than the users (80.56% of positive answers).

What is mostly recognized as a feature of the pilot is its effective capability to deliver the expected results: its usefulness is acknowledged and it is recognized that it can possibly outperform existing approaches. The only not completely positively reviewed aspect regards, once again, the novelty of the approach in preventing from known risks and common mistakes in the area of interest of the pilot. This can be further justified with the comments about the usability of the demonstrator in the final comments. The overall feedback of the survey to the pilot developer is then to work in this direction: some participant comments about SmartOpenData model also highlighted the need to verify the generality of such model to the needs of the Italian pilot.

4. Czech Republic (Forest Sustainability).

As noted above, the Czech pilot, while still reviewed positively, received a number of positive answers lower than the other pilots (58.33%). In the case of this pilot, the number of architecture/pilot developers evaluating it was 4 and we had only 1 architecture/pilot users. Between the two groups, developers have been more skeptical about the capabilities of the pilot (scoring 53.33% of positive answers) than the user (with 66.67% of positive answers).

While the most evident result regards the unanimous opinion about the difficulty on the marketability of the pilot (that, however, can be again explained with the very specific area of interest of the pilot), what should be considered are also the overall lower scores about its recognized added value with respect to the current solutions.

Thus, these results may suggest to the pilot developers to better demonstrate the capabilities of the pilot with respect to its applicability and possible advantages with respect to these questions.
5. Slovakia (Environmental Data reuse).

The Slovakian pilot was again one of the most appreciated across all pilots, with 81.67% of overall positive answers. The number of architecture/pilot developers evaluating the pilot was 4 and only 1 participant identified with the architecture/pilot users. Both type of participants positively evaluated the pilot, with the developers being slightly more positive (79.17% of positive answers) than the users (75% of positive answers).

The main perceived value of this pilot regards its capability to efficiently deliver the expected results. It is acknowledged that its use can facilitate the users by e.g. solving common mistakes: on the other hand, also in the case of this pilot, its marketability is not seen as a strength point (then again, this might be motivated by the specificity of the pilot).

By these results, the pilot developers might still consider to further refine the presentation of the pilot in order to better clarify the advantages of its adoption.

2.3.2 Aggregated results

As preliminarily noted in the above section about the aggregated results, the overall feedback of the internal evaluation of pilots is positive.

Summarizing, the pilots were mostly appreciated for their effectiveness in providing the expected results (i.e. in meeting their declared requirements), while scored less with respect to their advantages in reducing the effort and risks of the tasks they are aimed to solve. Moreover, the marketability of the pilots has not been positively acknowledged by the participants: how discussed for some of the pilots, this might be related to the very specific area of interest covered by the pilots. Important requirement for the further developments will be closer linkage to the developed SmartOpenData infrastructure components, particularly to the harmonised SmartOpenData vocabularies and front end facilities.

On the base of such considerations, the overall recommendation to the pilots developers is thus to provide more evidence for the novelty and advantages of the proposed solutions: this can be achieved by stronger links to the developed infrastructure components, revised /clarified descriptions of the requirements and underlying use cases, refining the demonstrators for the pilots and further detailing the support material for the evaluators in order to better assess such aspects in the following phases of the evaluation.

Apart from this, another point that needs attention is underlined by the final comments provided in Question 56: the interaction across the SmartOpenData model/open data and the models used in the pilot use cases should be better defined and enhanced. Where possible and relevant, this could be addressed with the usage of the published open geo datasets and services across the pilots.

Finally, it should be considered that this internal evaluation has been conducted with a limited number of evaluations for each aspect, this fact being quite limiting and subjective in order to provide statistically accurate conclusions: of course, this should be the aim for the external evaluation, where it will be interesting to verify whether the current results will be confirmed by the external participants.
3 External evaluation

The external evaluation had the goal to provide a second and definitive feedback on the results of SmartOpenData project outcomes from the external stakeholders, again with respect to the SmartOpenData model, infrastructure and pilot use cases. The results of the evaluation help to understand the impact of the efforts in these outcomes and the effective solution to possible problems highlighted in previous evaluation. Moreover, we will also consider the final quality metrics for each pilot and the external surveys results to assess the achievement of the expected quality levels. We will summarize in the following the intended goals and approach used in the external evaluation.

3.1 Evaluation goals and approach

The goal of the external evaluation was to collect feedback on the final version of the project outcomes from the point of view of external reviewers and users. As for the internal evaluation, this assessment permits to verify the expected quality of the outcomes and possibly to identify corrections or critical points that still need some attention. The elements to be assessed in the evaluation are again the resources identified in D6.1 [1], thus the open data resources, facilities and demonstration pilots developed in the SmartOpenData project.

The instruments that have been chosen for the execution of the external evaluation are two: an external on-line survey, addressed to general external users, and a set of interviews, addressed to a number of subjects identified by single partners. The model of both surveys is in fact based on a revision of the internal survey: basically, the number of questions has been reduced (mostly in the external survey) and possibly aggregated in order to receive more significant feedback with less effort required from the user. The questions are again revised and aggregated on the base of the addressed evaluation point in sections analogous to the ones found in the internal survey. The version of the questions that has been used in the external survey (divided by sections) can be found in Annex B, while the questions used in the interviews are listed in Annex C.

The distribution of the two evaluation questionnaires has been defined as follows. A set of external user groups and external networks has been identified for each of the project partners: the external survey has been distributed to such channels. A set of stakeholders interviews was defined for each of the partners involved in the development of a pilot. Moreover, the external survey was distributed to final users during the SmartOpenData dissemination events held during the evaluation period.

The support document used in the internal evaluation have been revised and parts of it have been directly linked as separate documents as support (and to add further detail) to specific questions. In particular, for the assessment of pilots a video demonstration has been provided for each pilot.

The external evaluation data collection period run from 25/09/2015 to 10/10/2015. Further interviews were collected after this period, mostly corresponding to the public dissemination events held in the end of October 2015. We received a total of 46 responses (30 survey results and 16 interviews).
In the following we will study the results concerning the evaluation of demonstration pilots. As in the case of the internal survey, document D6.5 [2] will assess the results relative to the SmartOpenData infrastructure.

### 3.2 Evaluation results

In the following we provide the responses obtained from the execution of the external surveys and interviews. In order to better compare the results with the previously presented internal evaluation, we will basically follow the same approach and criteria. In addition to this, for each of the pilots, we will report the values for the specific pilot quality criteria defined in D6.1 [1].

In the following graphs we report the user demographic data of the participants (for external survey and interviews).

**Figure 24: Distribution of participants by country**

**Figure 25: Distribution of participants by sector**

**Figure 26: Distribution of participants by category**

In the case of this evaluation iteration, as we are working with external subjects, the most interesting criteria regard the category of the participants. It can be verified that, as expected from the organization of evaluation, the most represented category is the
User/Consumer in both the interviews in external survey (in which, however, there is a more homogeneous distribution of responses across the categories). As in the case of the internal evaluation, we can use this distinction in the analysis of the answers provided by each category over the different pilots.

In the following section we will distinguish the pilots specific results and metrics; in the last subsection we will then aggregate these results in order to draw conclusions on the comparison across pilots.

### 3.2.1 Pilot specific results

In this section, similarly to the internal evaluation, we provide the results of the pilot specific questions for the external survey and interviews by distinguishing which pilot was evaluated.

In this case, the questions regarding this aspect are shown in the following Table 3, corresponding to questions 19-25 of the external survey and 32-38 of the interview.

<table>
<thead>
<tr>
<th>Understanding its value I:</th>
<th>Understanding its value II:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Does the SmartOpenData infrastructure or its pilots...</td>
<td>Does the SmartOpenData infrastructure or its pilots...</td>
</tr>
<tr>
<td>- Help you get your job done?</td>
<td>- Create potential for further activities to be built upon these outcomes?</td>
</tr>
<tr>
<td>- Produce outcomes you expect or that go beyond your expectations?</td>
<td>- Would you use this product?</td>
</tr>
<tr>
<td>- Make your job or life easier?</td>
<td>- Would you pay for it?</td>
</tr>
</tbody>
</table>

**Table 3: Pilot related questions in external survey**

Moreover, in the interviews we have the following “quantitative” questions that evaluate different measures about the pilots, in questions 19-31:

<table>
<thead>
<tr>
<th>User satisfaction:</th>
<th>Reliability:</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Usefulness</td>
<td>- Stability</td>
</tr>
<tr>
<td>- Confidence / Trustworthiness</td>
<td>- Safety</td>
</tr>
<tr>
<td>- Pleasantness</td>
<td>- Responsiveness</td>
</tr>
<tr>
<td><strong>Usability:</strong></td>
<td><strong>Functional suitability:</strong></td>
</tr>
<tr>
<td>- Accessibility</td>
<td>- Fitting the purpose</td>
</tr>
<tr>
<td>- Appropriateness</td>
<td>- Coverage</td>
</tr>
<tr>
<td>- Learnability</td>
<td>- Business potential</td>
</tr>
<tr>
<td>- Error protection</td>
<td></td>
</tr>
</tbody>
</table>

**Table 4: Pilot related measures in interviews survey**

The graph in the figure below reports the total distribution of responses for each pilot, corresponding to questions 16 in the survey and 18 in the interviews (Selection of the pilot).
1. Spain and Portugal (Agroforestry Management).

The Spain and Portugal pilot had a total of 23 evaluations. In Figure 28 we summarize as a chart the results of the specific questions regarding this pilot.

In general, the pilot was evaluated positively with 45.65% of positive answers (and 34.78% of partial answers). The most appreciated aspects are about potential for further activities and possibility of use both with 60% of positive answers. On the other hand, the aspect receiving the most negative feedback regarded the possibility to pay for its use with 60% of negative answers.

We received 6 interviews commenting this pilot. With respect to the pilot measures in the interviews, we summarize their results in the graph below:
The most appreciated aspects are the *Usefulness*, *Fitting the purpose* and *Business potential* of the pilot with 50% of positive answers. The less appreciated aspects are its *Stability*, *Safety* and *Responsiveness* with 16% of negative answers.

2. Ireland (Research and Biodiversity).

The Irish pilot had a total of 9 evaluations. In Figure 30 we report the results of the specific questions regarding this pilot.

In general, the pilot was evaluated positively: 48.15% of answers are positive (with 37.04% of neutral “partially” answers). The most appreciated aspects regard the *potential for further activities* with 77.7% of positive answers and *helpfulness (make your job or life easier)* and *applicability (would you use this pilot)* both with 55.5% of positive answers. The aspect receiving the most negative feedback, on the other side, regarded the *possibility to pay* for its use with 66.6% of negative answers.

We received 4 interviews commenting the Irish pilot. We summarize the results of pilot measures in the interviews in the graph below:
The most appreciated aspects are the *Accessibility* and *Business potential* of the pilot with 50% of completely positive answers. On the other hand, these were also the aspect receiving negative reviews (in 25% of answers).

### 3. Italy (Water Monitoring).

The Italian pilot had a total of 10 evaluations: the chart in Figure 32 shows the results of the specific questions regarding this pilot.

Also for the external iteration of the evaluation the pilot was evaluated positively: 45% of answers are positive and 40% are partial. The most appreciated aspect is about *potential for further activities* with 90% of positive answers, while the aspect receiving the most negative feedback regarded the *possibility to pay* for its use, with 60% of negative answers.

We received 3 interviews commenting this pilot. We report the results of pilot measures in the collected interviews in the graph below:
The aspect receiving the higher scores regarded the Confidence of the pilot. On the other hand, the aspects scoring the lower scores (2 out of 5) are the Pleasantness, Accessibility and Learnability of the pilot.

4. Czech Republic (Forest Sustainability).

The Czech Republic pilot had a total of 10 evaluations. In Figure 34 we summarize as a chart the results regarding this pilot.

The pilot was in general evaluated positively with 46.67% of positive answers (and 35% of neutral answers). The most appreciated aspect regard the potential for further activities with 80% of positive answers. The aspect receiving the most negative feedback regarded the possibility to pay for its use with 60% of negative answers.

We received 1 interview providing feedback for the Czech pilot. As above, for comparison with the other pilots, we report the results of pilot measures from the interview in the following graph:
In the interview, the aspects receiving the higher score regarded the *Confidence, Responsiveness* and *Coverage* of the pilot. The aspect scoring less (2 out of 5) are the *Learnability* and *Business potential* of the pilot.

5. Slovakia (Environmental Data reuse).

The Slovakian pilot had a total of 10 evaluations. In Figure 36 we summarize as a chart the results regarding this pilot.

The pilot was evaluated with 35% of positive answers and 48.33% of partial (neutral) answers. The most appreciated aspect is about the pilot potential for further activities with 70% of positive answers. On the other hand, the possibility to pay for its use was the aspect receiving the most of negative feedback (with 50% of negative answers). We also note that the aspect about usefulness (*help you get your job done*) received the totality of neutral responses (in the relevant answers).

We received 2 interviews commenting the Slovakian pilot. We summarize the results of pilot measures in the graph that follows:
The most appreciated aspects are the *Usefulness, Confidence, Pleasantness* and *Fitting the purpose* of the pilot with 50% of positive answers. The aspects scoring less are *Accessibility* and *Learnability* with 100% of the median answer (3 out of 5).

### 3.2.2 Pilot specific metrics

With respect to the pilot specific quality metrics defined in D6.1 [1], we report in the following sections the results and responses directly provided by the pilot developers.

#### 1. Spain and Portugal (Agroforestry Management).

The metrics in the case of the Spain and Portugal pilot have been defined as the following list of criteria:

1. *Cooperation to implement the pilot process and/or adopting it.*

   The cooperation across the developers has been fruitfully defined: semantic queries implementation on PT-SP pilot has been always supported by active participation of forest SMEs (as Föra or CESEFOR) and Maceda tree nursery (TRAGSA) in order to find out the correct answer to the main question *“What is the most suitable specie for a specific plot?”*. The help provided by forest engineers has highlighted that the evolution of a specific tree species is determined by several weather and geological features. As an example, in the following image there is a summarized list of weather inputs:

![Figure 37: SK measures results](image)
Using that decision matrix is possible to know that *Pinus Silvestris* (Scots pine) does not support high temperatures period higher than 4 months. Therefore, the implemented semantic queries are just a translation of this knowledge matrix. Obviously, all this information is not TIC at all, and it has been mandatory to request and gather help from stakeholders, forest engineers, and SMEs. Basically, the PT-SP pilot implements the questions summarized by that decision tool. Similarly, due to the close collaboration between DGT (Portugal) and TRAGSA (Spain) it was detected that some datasets related to water management, erosion and Land Use (Portuguese data) linked with Forest Management or Species distribution datasets (Spanish Data) could be used to deploy very interesting queries as: “What is the most suitable species to be grown in a specific plot that could, besides, avoid soil erosion?”. This query could be considered a very good example of LOD power since it shows how to use cross-border datasets to solve citizenship problems in a very easy way.

2. if an online service has been provided for in order to make queries on the most suitable species, positive queries on admission units, their availability and data update, and queries on seed nurseries, stocks and their updates.

The online service has been provided and it is available at: [http://map.tragsatec.es/SMODGeoportal/geoportal/SMOD.html](http://map.tragsatec.es/SMODGeoportal/geoportal/SMOD.html). The page gives access to the Tools (Sefarad, Notification service) and Links to the data (ontology, SPARQL endpoint) developed in the pilot. On the other hand, the services for the management of seed information have not been developed: while information about the best and worst species is available, there is currently no link to the Silvadat database containing information about admission units. The interest of the pilot development was instead aimed at obtaining integration across the data of the two partners and define cross-border queries.
3. *Number of visits to these services.*

What can be measured is the number of visits to the pilot web page. The SmartOpenData site analytics report that from the launch of the site (1/1/2014) to the end of the project (1/11/2015) at least 1.178 visits to the pilots page of the project website\(^1\) were performed (being the 4\(^{th}\) more visited page of the site) and 346 to the page\(^2\) presenting the Spain and Portugal pilot (being the 8\(^{th}\) more visited page of the site and in general the more visited among pilots pages). From the site analytics we can also discover that most of the activities on this page are in conjunction with the TRAGSA workshop on 28/10/2015 (scoring 20 page views) and, in general, with the period of execution of internal and external evaluations. The following graph shows the visits of the pilot page in from June 2015 to November 2015:

![Figure 39: PT & ES pilot page views from 1/6/2015 to 1/11/2015](image)

4. *Number of visits to these services versus traditional analog queries.*

It is not measurable how many analog traditional queries\(^3\) are executed with the respect to use of the pilot queries: in this sense, one can also assert that the ratio is almost infinite.

2. Ireland (*Research and Biodiversity*).

The criteria of Success of the Irish Pilot’s Scenarios were defined as follows:

1. Usage level and User Validation of the Irish Pilot’s Services that use SmartOpenData
2. Increased access to harmonised and interoperable GI, L/OD and VGI data
3. Integrate data from users’, OD, crowd-sourced and social media.
4. Integration of VGI into existing SDIs and LOD
5. Easy collection of information using smart phones and LOD
6. Reuse and share tourist information resources, channels and tools
7. New tourism activities, visitors and jobs, and new SME developed Apps and Services.

These were provided with the following targets in the following table:

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\(^1\) [http://www.smartopendata.eu/pilots](http://www.smartopendata.eu/pilots)


\(^3\) The information available to users (in the area of interest of the current pilot) to traditionally query seeds information can be found e.g. at [http://wwwsp.inia.es/Investigacion/centros/CIFOR/redes/Genfored/Paginas/Regiones%20Procedencia.aspx](http://wwwsp.inia.es/Investigacion/centros/CIFOR/redes/Genfored/Paginas/Regiones%20Procedencia.aspx)
The following is what was actually achieved by October 2015:

<table>
<thead>
<tr>
<th>Irish Pilot Scenarios.</th>
<th>Apps/Services in Operation</th>
<th>No of App/Svc Users</th>
<th>No GI/LOD datasets in use</th>
<th>No VGI datasets created</th>
<th>Monthly access-.es</th>
<th>New Apps/Svcs</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. SmartOpenData enabled ETIS Webservice for the Burren &amp; European GeoParks Network.</td>
<td>2</td>
<td>18</td>
<td>4</td>
<td>2</td>
<td>50</td>
<td>2</td>
</tr>
<tr>
<td>2. SmartOpenData enabled Farming for Conservation webservice</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>3. SmartOpenData enabled App to Ground-Truth potential Protected Monument sites</td>
<td>1</td>
<td>4</td>
<td>3</td>
<td>1</td>
<td>25</td>
<td>1</td>
</tr>
<tr>
<td>4. SmartOpenData Platform input to the Irish Open Government Partnership (OGP) process</td>
<td>0</td>
<td>100+</td>
<td>1000</td>
<td>0</td>
<td>n/a</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total for Irish Pilot</strong></td>
<td><strong>3</strong></td>
<td><strong>122</strong></td>
<td><strong>1007</strong></td>
<td><strong>3</strong></td>
<td><strong>75</strong></td>
<td><strong>3</strong></td>
</tr>
</tbody>
</table>

We can briefly motivate these results in the following. The planned ETIS and Ground Truthing services were successfully implemented and achieved the planned service levels. However, usage and take-up was slower than planned. So meetings and presentations with users are currently continuing as there is a very positive reaction and interest in the services. It is planned to continue the services and it is expected that the original targets will be far exceeded in time. As reported in D5.1 [3], from meetings and discussions to further engage stakeholders and communities at the local level, it became clear that the best benefit and added value could be achieved by focusing on the Burren GeoPark and helping it to ensure sustainable tourism for the Park. The Farming for Conservation web service, which was
mainly to involve the transformation of various Excel spreadsheets to RDF, was not going to benefit much from being made Linked Open Data (LOD), as the spreadsheets were mainly private, and there was likely to be little impact on the Burren communities, especially in the context of the other scenarios of the Tourism for Conservation and Heritage scenarios, in which the various stakeholders expressed a very keen interest. So that scenario was dropped as shown in the results above. The fourth scenario provided very useful SmartOpenData input to the Irish Open Government Programme (OGP) process through various interactions and attendance at various workshops. The project stressed that the Irish Open Data Strategy should include more emphasis on providing Open Data as Linked Data more widely than its current Roadmap suggests, by providing more guidance to Public Sector Organisations to go straight to Linked Open Data (LOD) – along with explaining the benefits of doing so - rather than going through the steps of initially just being Open Data. In addition, the need for an Irish national repository for Persistent URIs for all Irish Public Sector Information (PSI) Linked Open Data was stressed. The Irish National Strategy for Persistent URIs should follow the best practice from W3C, and following the UK and other governments’ best practice this should be at “data.gov.ie”, to ensure long-term use, growth and trust in Irish PSI LOD. While the Irish Open Data Strategy now includes a target to have all data Linked and Open within 5 years, there has not yet been any progress on the establishment of an Irish Persistent URIs repository. The Irish open data sites at data.gov.ie site now has about 1,000 open datasets as shown above, but the nature of this scenario in the pilot did not yet result in any further services, as originally targeted. However in time, it is expected that extensions of the ETIS and Ground-Truthing Services will do so.

3. Italy (Water Monitoring).

The pilot specific metrics for the Italian pilot were defined by the (qualitative) questions that follow: we report the answers provided by the Italian pilot developers.

1. What is the number and variety of stakeholders engaged in the pilot activities and contributing by opening up their data?

The stakeholders fall into five categories:

- ARPA staff, particularly those in the different territorial offices
- Other public administrations and agencies (health, etc.)
- Municipal governments: Palermo, Bagheria, and Syracuse
- The local Open Data Community – ODS OpenDataSicilia – made up of individuals from different sources, including public administrations but mostly SMEs.
- Local stakeholders with a community interest, notably the participants in the MoU

Of these, the city of Palermo has already an Open Data strategy while Bagheria and Syracuse are planning to begin one. The most active group in publishing datasets is ODS.

2. Are the stakeholders able to properly format their data and publish it as Open Data?

The city governments are asking help for formats and data management. ODC as a community generally offers to provide that support, including to ARPA.

3. Do the stakeholders explore relationships between datasets that can enhance and enrich the SmartOpenData semantic framework?
The SmartOpenData pilot demonstrator had a significant effect even on the members of ODS, who are more used to elaborating and visualising single datasets than relating different datasets. The first discussions on the possible inter-relations did influence the second phase of the pilot and the extension of the data modelling.

In addition, some of the missing datasets that would have allowed to answer the pilot questions have been identified. For instance, it would have been useful to related environmental readings to the presence of human activity, but the appropriate codes are not listed within the protected area data on the regional SITR system; the appropriate offices have been alerted.

4. Is ARPA able to publish reports on air and water quality in a more timely and/or accurate fashion?

As a result of participation in SmartOpenData, ARPA is launching an Open Data strategy in collaboration with ODS. This is leading to a return towards real-time publishing of air quality readings, as well as a more complete publishing of water quality readings.

5. Does ARPA gain increased ownership of its mission of collecting and disseminating meaningful data?

The experience in SmartOpenData has had an important impact on ARPA, which is in fact now establishing an Open Data office and strategy. This is the result of the impact of open data on awareness of ARPA’s role and mission.

6. Is there an increase in the usage of ARPA’s services by both internal (to the Regional government), institutional and external stakeholders?

The relation to other offices of the regional government has not been satisfactory; also, it was perceived a low interest in data services in general. On the other hand, the interaction with the ODS community has been significant: already several maps have been created to visualise the ARPA data.

7. Do the functionalities and facilities “returned” by the SmartOpenData infrastructure provide a meaningful and useful support to the issues of interest to the stakeholders?

There has been much interest in some of the specific tools used in the ARPA pilot, especially the Refine environment and the Sindice browser, and it is likely that these will be integrated into a permanent infrastructure for ARPA but also for use by the broader community.

4. Czech Republic (Forest Sustainability).

The indicators identified as the pilot specific metrics for the Czech pilot are the following:

1. Availability of the website for the pilot

The website has been established and it is available at http://nil.uhul.cz/.

2. Number of visits

As of the end of October 2015, the authors report 874 visits monthly to the pilot site. If we consider again the analytics for the Czech pilot description page on the SmartOpenData site,
we have that the page has been visited 98 times overall (in the period 1/1/2014 - 1/11/2015). As above, most of the visits were recorded in the periods of the evaluations: in the graph below we show the number of visits to the pilot description page from 1/7/2015 to 1/11/2015:

![Figure 40: CZ pilot page views from 1/7/2015 to 1/11/2015](image)

3. Official feedback from bodies outside UHUL

Feedback from partners outside UHUL was directly provided using the external surveys and interviews. In particular, feedback was received from these partners: MESTYS, CAGI, Plan4all and Wirelessinfo.

4. Number of connections or applications demanding the pilot’s data sources, if possible to track

It is not possible yet to track this value in the current version of the pilot.

5. Number of queries to deployed services

The pilot authors report a number of 150 monthly queries to the pilot’s services.

5. Slovakia (Environmental Data reuse).

The metrics evaluating the Slovakian pilot were defined in terms of quantitative measures over a set of identified use cases. In the following table we report the specific metrics defined for the pilot use cases together with their target values and the effective results reported by the Slovakian pilot developers:

<table>
<thead>
<tr>
<th>Slovak Pilot Use cases.</th>
<th>No. of datasets</th>
<th>No. of md records</th>
<th>No of APIs</th>
<th>No. of applications</th>
<th>No. of users</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. How to create spatial linked data?</td>
<td>5</td>
<td>5</td>
<td>2</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Results:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td>62 Users</td>
<td></td>
</tr>
</tbody>
</table>

5 [https://docs.google.com/presentation/d/1bUCfFtmhYiuOJD5wDF5ye01Xr-KHMIplwG1DCar3FM/present?ueb=true#slide=id.p](https://docs.google.com/presentation/d/1bUCfFtmhYiuOJD5wDF5ye01Xr-KHMIplwG1DCar3FM/present?ueb=true#slide=id.p)
<table>
<thead>
<tr>
<th>2. Where to search and discover available spatial data?</th>
<th>0</th>
<th>100-1000</th>
<th>4</th>
<th>1</th>
<th>20</th>
</tr>
</thead>
<tbody>
<tr>
<td>3. Display and view of discovered spatial data</td>
<td>25</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>20</td>
</tr>
</tbody>
</table>

6https://docs.google.com/presentation/d/1fYfgYLVCFiMfzw8EjOi_d_WTSJkJWSjxfDdeoTKTxYM/edit?usp=sharing
Results:

<table>
<thead>
<tr>
<th>128 243 MD records for datasets and 3750 for services at: <a href="http://31.147.204.166:8080/geonetwork/srv/eng/catalog.search#map">http://31.147.204.166:8080/geonetwork/srv/eng/catalog.search#map</a></th>
<th>0</th>
<th>1</th>
<th>1</th>
<th>1</th>
<th>50 users²</th>
</tr>
</thead>
</table>

4. Help citizens and decision makers to investigate, what kind of biodiversity potential as well as environmental risks can be identified in the area of their interest.

Results:

<table>
<thead>
<tr>
<th>5 datasets at: <a href="https://data.sazp.sk/dataset">https://data.sazp.sk/dataset</a></th>
<th>5 MD records at: <a href="https://data.sazp.sk/data">https://data.sazp.sk/data</a> set</th>
<th>3 APIs: Sparql RDF ZIP</th>
<th>DanubeHack: <a href="http://www.danubehack.eu/">http://www.danubehack.eu/</a></th>
<th>1.742 users⁵</th>
</tr>
</thead>
</table>

To conclude this part, in general all identified use-cases for the Slovakian pilot was possible to fulfill with heterogenic results. Whilst first three use-cases were completed with or even behind the initial expectations, the last use-case was covered only partially as there was an intention to better visualize the published links to third party linked data resources as well as achieve better utilization of the created and published linked data in the domain of the biodiversity. Anyway results achieved so far helped significantly to strengthen the awareness and understanding of the availability of open linked geo data, even aligned with European legislation (INSPIRE) as on national⁹ as well as on European level¹⁰. We're confident the results also helped to strengthen the Open Data Maturity as on national level in Slovakia as well as in other European countries represented in SmartOpenData consortium¹¹.

---

¹https://docs.google.com/presentation/d/1fYfgYLvCFiMfzw8EjOi_d_WTSJkWSjxfDeoTKTxFYmg/edit?usp=sharing
²https://docs.google.com/presentation/d/12cPJHs1tH_nRelHZNA_ObTMh_Te15JsjQzVdMqKRGk4/present?ueb=true#slide=id.p
³http://danubehack.eu/outcomes/workshops/day0/00_04_smartopendata.pdf
⁴http://geospatialworldforum.org/speaker/SpeakersImages/Martin%20Tuchyna.pdf
⁵http://www.europeandataportal.eu/en/content/open-data-maturity-europe
3.2.3 Aggregated results

In the following graphs, we aggregate the results for the single pilots over each of the questions in Table 3 and Table 4 in order to compare them with respect to their common aspects.

**Figure 41: Question 19/32. “Help you get your job done?”**

**Figure 42: Question 20/33. “Produce outcomes you expect...?”**
Figure 43: Question 21/34. “Make your job or life easier?”

Figure 44: Question 23/36. “Create the potential for further activities to be built...?”

Figure 45: Question 24/37. “Would you use this product?”
Figure 46: Question 25/38. “Would you pay for it?”

Figure 47: Question 19. “Usefulness”

Figure 48: Question 20. “Confidence / Trustworthiness”
Figure 49: Question 21. “Pleasantness”

- Czech Republic: 1, 2
- Ireland: 1, 2, 3
- Italy: 1, 2
- Slovakia: 1, 2
- Spain & Portugal: 1, 2, 1

Figure 50: Question 22. “Accessibility”

- Czech Republic: 1, 2
- Ireland: 1, 1, 2
- Italy: 1, 1
- Slovakia: 2
- Spain & Portugal: 2, 2, 1

Figure 51: Question 23. “Appropriateness”

- Czech Republic: 1
- Ireland: 1, 1, 1
- Italy: 1, 2
- Slovakia: 2
- Spain & Portugal: 2, 2, 1
Figure 52: Question 24. “Learnability”

Figure 53: Question 25. “Error protection”

Figure 54: Question 26. “Stability”
**D6.4 Evaluation and assessment of pilots**

**SmartOpenData project (Grant no.: 603824)**

<table>
<thead>
<tr>
<th></th>
<th>Czech Republic</th>
<th>Ireland</th>
<th>Italy</th>
<th>Slovakia</th>
<th>Spain&amp;Portugal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Question 27:</td>
<td>0 1</td>
<td>0 2 2</td>
<td>0 2</td>
<td>0 1</td>
<td>0 1 2</td>
</tr>
<tr>
<td>Question 28:</td>
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<td>0 2</td>
<td>0 1</td>
<td>0 1 2</td>
</tr>
<tr>
<td>Question 29:</td>
<td>0 1</td>
<td>0 2 2</td>
<td>0 2</td>
<td>0 1</td>
<td>0 1 3</td>
</tr>
</tbody>
</table>

**Figure 55: Question 27. “Safety”**

**Figure 56: Question 28. “Responsiveness”**

**Figure 57: Question 29. “Fitting the purpose”**
We can give some general results over these aggregated graphs. First of all, the pilots were overall evaluated positively with 44.35% of the answers (for the questions shared by the two surveys) are positive (with 38.17% of answers for the neutral “partially” choice). Also, with respect to the measures in the interview, the average score is 3.67 out of 5. The most recognized aspects are the application potential of the pilots with 72.58% of positive answers and the applicability of the pilots, with 56.45% of positive feedback. In general, the aspect receiving the most negative feedback is the possibility to pay for the pilot, with 59.68% of negative answers overall.

In comparison, based on these results the pilot that scored more positive responses is the Ireland pilot, with 48.15% of positive answers. On the other hand, the pilot scoring more negative responses is the Italian pilot with 13.33% of negative answers.

With respect to the pilot specific measures, since many of these criteria are not purely numerical but require a more critical approach in their evaluation and are strongly related to each single pilot, a precise aggregation of the current achievements is not easily accomplishable.
3.3 Results assessment

In this section we derive some conclusions from the results obtained in the external iteration of the evaluation. As in the case of the internal evaluation, we will analyze the results both from the point of view of single pilots results and in general about the aggregation over all pilots. This assessment can be used again to correct possible flaws in some of the expected quality levels, but also to verify whether refinements performed on the base of the internal feedback have been acknowledged by external users.

As in the case of the internal surveys, comments from the participants provide general information about the strengths and drawbacks of the current implementations of pilots. In particular, questions 17 and 18 in the external survey (see Annex B for full responses) provide some useful suggestions in this direction from the point of view of pilot users. For example, among the strengths of SmartOpenData pilots (Question 17), the users indicate mainly their ease of use and clarity of displayed results. Moreover, they recognize the innovation in they bring in their application field, their adoption in real world use cases and in the adoption of the Linked Data approach. Regarding the drawbacks (Question 18), the comments highlight the current technical incompleteness of some pilots and their uncertainty in the possibilities of adoption.

The kind of quantitative questions (based on a value scale from 1 to 5) defined by questions 19-31 of the interviews survey allow us to expand the assessment of results: where this data is available for a specific pilot, we will provide some simple statistics analysis on such results. In particular, we can now plot a quartile analysis graph on the values of these questions, showing the intuitive distribution of their responses. In doing this, we can now provide the values for some of the metrics defined in Section 5.2 of Deliverable D6.1 [1]. Where this data is available, we will provide a table showing the average on the measures in questions 19-31 in the interview survey that basically correspond to the proposed D6.1 metrics.

3.3.1 Pilot specific results

1. Spain and Portugal (Agroforestry Management).

The Spain and Portugal pilot received a total of 23 responses (17 from external surveys and 6 from interviews). As noted above, overall the evaluation of this pilot has been positive with over 45% of positive and 34% of partial answers. The number12 of users/consumers evaluating the pilot was 16, service/application developers were 8 and data resource providers were 5.

In comparison, the data providers provided more positive feedback (50% of positive answers and 26.67% of neutral answers) than the application developers (45.83% of positive answers and 41.67% of partial answers) and users (48.96% of positive answers and 32.29% of partial answers).

In the following we report the quartile analysis and the average values of the quantitative measures provided in the results of the interview surveys.

---

12 Note that each participant had the possibility to choose more than one membership to these categories.
From the results and these measures, it appears that the main perceived strengths of this pilot regards its potential for further activities, applicability, and business potential. On the other hand, the pilot has not been recognized for its deployment as a commercial tool. Note that this is also reflected by the comments in Questions 22 and 26 ("Can you comment on your choices") of the external survey (and the corresponding in the external interviews): while most of the positive comments note that this tool can be useful in their job and provide an effective tool for data management, most of the comments are skeptical about its marketability and lean towards an open source distribution of the tools and free access to the data. From the point of view of pilot specific metrics, it appears that where measurable the pilot met its quality metrics, while the impact of some of them is difficult to evaluate (the ratio of analog versus service based queries).
2. Ireland (Research and Biodiversity).

The Irish pilot received a total of 9 responses (5 from external surveys and 4 from interviews). Overall it has been positively evaluated with over 48% of positive answers. The number of users/consumers evaluating the pilot was 7, data providers were 3 and service/application developers was 1.

Final users provided more positive feedback (52.38% of positive answers) while the application developers and data providers gave a more partial assessment (both 50% of partial answers).

We report the quartile analysis and the average values of the quantitative measures provided in the interviews results.

![Quartile analysis for IRL pilot](image)

<table>
<thead>
<tr>
<th>Measure</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Usefulness (Satisfaction)</td>
<td>4</td>
</tr>
<tr>
<td>Confidence / Trustworthiness (Trust)</td>
<td>4.25</td>
</tr>
<tr>
<td>Pleasantness (Pleasure)</td>
<td>3.75</td>
</tr>
<tr>
<td>Accessibility</td>
<td>3.75</td>
</tr>
<tr>
<td>Appropriateness</td>
<td>3.5</td>
</tr>
<tr>
<td>Learnability</td>
<td>3.5</td>
</tr>
<tr>
<td>Error protection</td>
<td>3.75</td>
</tr>
<tr>
<td>Stability (Fault tolerance)</td>
<td>4</td>
</tr>
<tr>
<td>Safety</td>
<td>3.5</td>
</tr>
<tr>
<td>Responsiveness</td>
<td>3.5</td>
</tr>
<tr>
<td>Fitting the purpose</td>
<td>3.75</td>
</tr>
<tr>
<td>Coverage</td>
<td>3.25</td>
</tr>
<tr>
<td>Business potential</td>
<td>3.75</td>
</tr>
</tbody>
</table>

*Figure 61: Quartile analysis for IRL pilot*
By these results, it appears that the perceived value of this pilot regards its potential for further activities and usefulness, but it has not been recognized as a possible commercial outcome. This is confirmed by the comments (questions 22 and 26) provided by participants: for example, it is recognized that “it enables me to use less equipment, and get an accurate GPS” and “avoids duplication of sites and avoids uploading my reports manually”, but on the other hand the tool “should be provided as a free app to be promoted by public agencies in the area of heritage and conservation”. With respect to the pilot specific metrics (and the supporting discussion), it can be seen that the pilot reached the levels it was aiming for in the scenarios that resulted interesting and fruitful, while some of the scenarios had to be dropped or scaled down in perspective of their minor interest or applicability in practice.

3. Italy (Water Monitoring).

The Italian pilot received a total of 10 responses (7 from external surveys and 3 from interviews) with an overall evaluation having 45% of positive and 40% of partial answers. The number of users/consumers evaluating the pilot was 2, service/application developers were 7 and data resource providers were 3.

The final users provided more positive feedback (58.33% of positive answers) than the application developers (47.62 % of positive answers and 38.10% of partial answers) and data providers (44.44% of positive answers and 50% of partial answers).

We report the quartile analysis graph showing the values of the quantitative measures provided in the collected interviews.

<table>
<thead>
<tr>
<th>Measure</th>
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</tr>
</thead>
<tbody>
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<tr>
<td>Confidence / Trustworthiness (Trust)</td>
<td>4.67</td>
</tr>
<tr>
<td>Pleasantness (Pleasure)</td>
<td>3.33</td>
</tr>
<tr>
<td>Accessibility</td>
<td>3.33</td>
</tr>
<tr>
<td>Appropriateness</td>
<td>3.67</td>
</tr>
</tbody>
</table>
4. Czech Republic (Forest Sustainability).

The Czech pilot received a total of 10 responses (9 from external surveys and 1 from interviews). Overall, the pilot was evaluated positively with over 49% of positive and 31% of partial answers. The number of users/consumers evaluating the pilot was 8, service/application developers were 4 and data resource providers were 2.

Data providers have been the most positive in evaluating the pilot, providing 58.33% of positive answers while application developers provided 50% of positive answers and 37.50% of partial answers and consumers provided 47.92% of positive answers and 31.25% of partial answers.

As above, to facilitate the comparison with the other pilots, we report the quartile analysis graph for the single collected interview.

---

**Learnability** | 3,33
**Error protection** | 3,67
**Stability (Fault tolerance)** | 4,33
**Safety** | 3,33
**Responsiveness** | 4,33
**Fitting the purpose** | 4,33
**Coverage** | 4
**Business potential** | 3,33

*Figure 62: Quartile analysis for IT pilot*

By the results presented in previous sections, it appears that the most appreciated value of this pilot is defined by its potential for further activities. Again, the possibility of using it as a commercial tool was not considered as a strength point: this impression is also confirmed in the free comments to such questions. The answers to the (qualitative) pilot specific metrics seem to suggest that the pilot has been successful in having an effective impact on the area of interest and generating interest in its application and open data technologies.
By the collected results, it emerges that the pilot is appreciated for its potential for further activities and utility in use, while it is not considered to have a commercial application. Again, this is confirmed by the user comments to these questions: users recognize that the pilot “present the real situations, in whose we can use the proposed technology background”, but “is for us crucial let the data be open, in sense of money and format”.

5. Slovakia (Environmental Data reuse).

The Slovakian pilot received a total of 10 responses (8 from external surveys and 2 from interviews). As noted above, overall the evaluation of this pilot has obtained over 35% of positive answers, but there are around 48% of partial (neutral) responses. The users/consumers evaluating the pilot were 7, service/application developers were 5 and data resource providers were 4.

The category providing the most favorable feedback were the users with 35.71% of positive answers, while data resource providers were the most negative by providing 16.67% of negative answers.

The following figures show the quartile analysis and the average values of the quantitative measures from the interviews.

<table>
<thead>
<tr>
<th>Measure</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Usefulness (Satisfaction)</td>
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<td>Confidence / Trustworthiness (Trust)</td>
<td>5</td>
</tr>
<tr>
<td>Pleasantness (Pleasure)</td>
<td>4</td>
</tr>
<tr>
<td>Accessibility</td>
<td>2</td>
</tr>
<tr>
<td>Appropriateness</td>
<td>3</td>
</tr>
<tr>
<td>Learnability</td>
<td>4</td>
</tr>
<tr>
<td>Error protection</td>
<td>5</td>
</tr>
<tr>
<td>Stability (Fault tolerance)</td>
<td>4</td>
</tr>
<tr>
<td>Safety</td>
<td>4</td>
</tr>
<tr>
<td>Responsiveness</td>
<td>5</td>
</tr>
<tr>
<td>Fitting the purpose</td>
<td>4</td>
</tr>
<tr>
<td>Coverage</td>
<td>4</td>
</tr>
<tr>
<td>Business potential</td>
<td>3</td>
</tr>
</tbody>
</table>

*Figure 63: Quartile analysis for CZ pilot*
These results suggest that the main perceived strengths of this pilot regard its potential for further activities and its easiness and effectiveness of use. Also in this case, this pilot has not been recognized for its deployment as a commercial tool. As in the case of previous pilots, these results are confirmed by the comments in Questions 22 and 26. The results for pilot specific metrics show that the expected number of services, data and users have been successfully achieved (and, in many cases, outperformed).
3.3.2 Aggregated results

In general, all pilots received a positive review, but there is still a considerable margin of neutral (i.e. “partially”) answers: on average, pilots received around 44% of positive answers and 38% partial answers.

All pilots were mostly appreciated for their potential for further applications and their applicability, while scored less on their possibility to be commercialized: while the positive scores are encouraging, as they show that it is recognized that the developed resources can be fruitfully applied to current and future use cases, the negative comments about their marketability are reasonable, considering the open nature of the pilots and their application to mostly non-commercial/institutional data. These facts are also confirmed by the open comments provided by the participants, suggesting that the increase in quantity and openness of the data available to SmartOpenData tools can increase the usefulness of the developed resources.

In the next section we will briefly compare the results of the internal and external evaluations to verify whether they share the same view or if there has been some evolution of pilots across the two iterations of interactions with the user groups.
4 Conclusions

In this document we presented the results and assessment for the internal and external evaluations of pilots carried out in the context of WP6 of the SmartOpenData project. The two evaluations were distinct in practice, but they were conceptually connected: the first internal assessment was verified by the following iteration of the external evaluation. Moreover, the internal evaluation represented a preliminary round for verifying the evaluation material and process to be applied in the external assessment.

In the following we will briefly compare the results of the two evaluations.

In general, both evaluations provided a positive outcome: in the internal survey the pilots received more than 73% of positive answers globally, while in the external evaluation they obtained 44.35% of global completely positive answers (with circa 38% of “partial” neutral answers).

In both evaluations the pilots were mostly recognized for the application potential of the pilots and their applicability to further activities: questions about applicability received more than 94% positive answers in the internal evaluation and more than 72% in the external surveys and interviews. On the other hand, the aspect that was less appreciated on the pilots regards the possibility to pay for the use of the pilots: in the internal evaluation this aspect received 50% of negative answers and this was confirmed in the external evaluation, where the negative answers amounted to circa 60%.

The results for the single pilots across the two evaluations do not appear to have a single trend also because of the larger spectrum of choices available in the external surveys: for example, in the case of the Slovakian pilot, it received more than 80% of positive answers in the internal evaluation and only 35% of positive answers (with around 48% of “neutral” answers) in the external evaluation; on the other hand, the Czech pilot seems to have received a more favorable feedback in the external evaluation (46% of positive answers and 35% of neutral responses) than in the internal surveys (58% of positive answers).

To conclude the process of evaluation of the pilots clearly demonstrated the demand for the practical examples of creation and deployment of the open linked geo data and importance to investigate and pay higher attention to the further utilization of these outcomes in connection to the commercial / business dimension.
5 References

6 Annex A: Internal evaluation collected data

In this annex we report the set of raw survey results collected during the internal evaluation process. We present the data by grouping questions using the same groups and order in which they were presented in the survey. In order to simplify the visual assessment of the data, in the case they present a quantitative result, we plot the values as histograms. In the case of a “qualitative” questions (open-ended questions), we explicitly report the original text of answers provided by the users.

6.1 Stakeholders identification

4. Internal group title

<table>
<thead>
<tr>
<th>Internal group title</th>
<th>Number of responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARPA</td>
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</tr>
<tr>
<td>FBK</td>
<td>2</td>
</tr>
<tr>
<td>HSRS</td>
<td>1</td>
</tr>
<tr>
<td>IMCS UL</td>
<td>2</td>
</tr>
<tr>
<td>MAC</td>
<td>3</td>
</tr>
<tr>
<td>SA2P</td>
<td>3</td>
</tr>
<tr>
<td>SINTEF</td>
<td>1</td>
</tr>
<tr>
<td>SpazioDati</td>
<td>4</td>
</tr>
<tr>
<td>TRAGSA</td>
<td>11</td>
</tr>
<tr>
<td>UHUL FMI</td>
<td>4</td>
</tr>
<tr>
<td>UPM</td>
<td>4</td>
</tr>
</tbody>
</table>

5. Country

<table>
<thead>
<tr>
<th>Country</th>
<th>Number of responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Czech Republic</td>
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</tr>
<tr>
<td>Ireland</td>
<td>3</td>
</tr>
<tr>
<td>Italy</td>
<td>7</td>
</tr>
<tr>
<td>Latvia</td>
<td>2</td>
</tr>
<tr>
<td>Norway</td>
<td>1</td>
</tr>
<tr>
<td>Slovakia</td>
<td>3</td>
</tr>
<tr>
<td>Spain</td>
<td>15</td>
</tr>
</tbody>
</table>
6. Which sector do you represent?

- Academia: 7
- Private Sector: 3
- Private Sector/...: 10
- Public Sector: 17
- R&D: 8

7. Which category best fits your status?

- Data/Resource pr...: 14
- Data/Service deve...: 22
- User/Consumer: 9

8. Role category of the partner in the project

- Infrastructure ele...: 11
- Infrastructure ele...: 5
- Pilot developer: 16
- Pilot user: 4
6.2 Pilot selection

9. Selection of the pilot

- Czech Republic: 5
- Ireland Environment: 4
- Italy Water Ministry: 5
- Slovakia Environment: 5
- Spain & Portugal: 17

6.3 SmartOpenData understanding its value

44. Help you get a job done?
- Yes: 33
- No: 3

45. Create savings that makes you happy?
- Yes: 25
- No: 11
46. Produce outcomes you expect or that go beyond your expectations?

- No: 3
- Yes: 33

47. Copy or outperform current solutions that delight you?

- No: 8
- Yes: 28

48. Make your job or life easier?

- No: 11
- Yes: 25
49. Do something you are looking for?

- Yes: 33
- No: 3

50. Put an end to difficulties and challenges you have encountered?

- Yes: 24
- No: 12

51. Eliminate risks you fear?

- Yes: 14
- No: 22
52. Eliminates common mistakes you make?

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>22</td>
<td>14</td>
</tr>
</tbody>
</table>

53. Help you to avoid barriers that are keeping you from adopting solutions?

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>24</td>
<td>12</td>
</tr>
</tbody>
</table>

54. Would you use this product?

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>34</td>
<td>2</td>
</tr>
</tbody>
</table>
55. Would you pay for it?

No 18
Yes 18

6.4 Final comments

56. You have now reached the end of this survey; please provide any additional comments that you may have.

- Thank you all SmartOpenData participants. You are doing a great job.
- Much done but a lot to do yet with the pilot!
- With regards to the common data model and common shared vocabularies provided by the project, their role seems somewhat obscure (at least in the settings of the project).
  The model consists of two parts: INSPIRE-based model and its extension into pilot-specific custom models (vocabularies).
  What concerns pilot-specific data models/vocabularies, there was no intersection between the needs and use cases of the pilots, hence every pilot required and used its own model/vocabulary.
  While the INSPIRE-based part of the model could have been used to motivate development of a common model and demonstrate its usefulness, the project lacked a corresponding use case for this.
- Replying only yes or no was somewhat difficult...
- Very interested in evaluation of the Italian Pilot in Sicily.
  Hoping to find open linked data appropriate for ARPA Data sources.
- Evaluation was focused on the Irish web app made available on 24.07.2015 (http://geoparks.cloudapp.net/)
- Based on information provided via document describing the pilots (https://docs.google.com/document/d/1BPdlcdkDppvDPsGik3_EZZpYy13J5RodUBNRYREjQec/edit#heading=h.gjd9jx)
- The survey should give more distinction about the evaluation of the SmartOpenData architecture and the single pilots. I would be also good to provide specific (positive or negative) feedback about the single features of the assessed pilot, in order to help the pilot developers increase the quality of their work.
  About the IT pilot, it would be good to limit/customize the interface of the visualizer in order to guide the user in its analysis (it is easy to get lost in the different options).
7 Annex B: External survey collected data

In this annex we report the set of raw survey results collected during the external evaluation process: the results are divided in the responses for the external survey and the interviews modules. As in previous annex, we present the data by grouping questions using the groups and order in which they were presented in the survey. We plot quantitative values as histograms and present the original text provided for open-ended questions.

7.1 Participant profile

1. Which category bests fits your current background?

- Academia: 9
- Individual Citizen: 4
- Public Sector: 12
- R&D: 4
- Private Sector/SME: 8
- NGO: 1

2. Which category bests fits your status?

- Data resource pro...: 11
- Service / application...: 14
- User/Consumer: 16
3. Country

<table>
<thead>
<tr>
<th>Country</th>
<th>Count</th>
</tr>
</thead>
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</tr>
<tr>
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</tr>
<tr>
<td>Germany</td>
<td>1</td>
</tr>
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<td>Ireland</td>
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<td>Portugal</td>
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</tr>
<tr>
<td>Slovakia</td>
<td>2</td>
</tr>
</tbody>
</table>

7.2 SmartOpenData – essentials

6. To what extent is your experience related with Open Data? (No experience – Well experienced)

<table>
<thead>
<tr>
<th>Experience</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
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</tbody>
</table>
7. To what extent is your experience related with the Linked Data and Semantic technologies and their benefits? (No experience – Well experienced)

8. Which SmartOpenData component is relevant to your needs?
7.3 Pilot type

9. Which SmartOpenData pilot is the most relevant for you?

<table>
<thead>
<tr>
<th>Country</th>
<th>Relevance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Czech Republic</td>
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<tr>
<td>Ireland</td>
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<td>Italy</td>
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<td>Slovakia</td>
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<tr>
<td>Spain &amp; Portugal</td>
<td></td>
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<tr>
<td>None</td>
<td></td>
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</tbody>
</table>

10. What are the main strengths of the SmartOpenData pilots?

- Easy, simple use
- I see main strengths in the prototypes, they present the real situations, in whose we can use the proposed technology background.
- SmartOpenData takes a much more Linked Data centric approach, re-using concepts wherever necessary but simplifying it where possible.
- I need to know more information in order to analyze the extent to which these pilots pointed out, has important data that intersect with the information that I want for my thesis.
- Use of linked data
- Clearly displayed results
- Innovation with data which could have impact on the environments.

11. What are the main drawbacks of the SmartOpenData pilots?

- Technical deficiency
- Limited evidence of links to third party linked data usage.
- Adoption will have to be seen
7.4 SmartOpenData – Understanding of its value I.

Does the SmartOpenData infrastructure or its pilots...

12. Help you get your job done?

- No: 2
- Not relevant: 7
- Partially: 16
- Yes: 5

13. Produce outcomes you expect or that go beyond your expectations?

- Not relevant: 4
- Partially: 16
- Yes: 10
14. Make your job or life easier?

- No: 2
- Not relevant: 6
- Partially: 15
- Yes: 7

15. Can you comment your choices?

- It's the present and the future
- In my point of view, all persons need to know how to get this data from portals, learning the proper sql language
- Certainly this will be something I will be looking into in doing my job
- I think the SmartOpenData is important for timely information on the real state of the themes that controls, and provides tools to make more effective management supported by actual data allowing simulations, to support decision

7.5 SmartOpenData – Understanding of its value II.

Does the SmartOpenData infrastructure or its pilots...

16. Create the potential for further activities to be built upon these outcomes?

- Not relevant: 1
- Partially: 8
- Yes: 21
17. Would you use this product?

- No: 1
- Not relevant: 1
- Partially: 11
- Yes: 17

18. Would you pay for it?

- No: 20
- Yes: 10

19. Can you comment your choices?

- If the company I work for does need to manipulate big data
- I come from academic sector, therefore is for us crucial let the data be open, in sense of money and format.
- The purpose of using it to study for a thesis, not for commercial purposes. If there is any commercial applicability I think there should be taxed a value related to% of the information used
- I don’t know this infrastructure
- Partially
- I would pay for expertise to make data and tools freely available.
- not before evaluating, i hope most of this will be open source
7.6 Final comments

20. You have now reached the end of this survey: please provide any additional comments that you may have.

- I see potential in this technology, hopefully it became a standard for sharing the data among a public sector, an academic sector, a public and so on.
- Please include also herbaceous species beside to woody plants
- I am a Biologist, and I knew this SmartOpenData for few weeks ago, so I have to learn how to use this service.
- I think these projects are very important for the consolidation of a more united Europe, benefitting all European citizens
- The more data will be open and available, the more valuable and useful tools to operate with them will become.
8 Annex C: External interviews collected data

8.1 Stakeholders Identification

4. External group title

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<thead>
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<tbody>
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<tr>
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</tr>
<tr>
<td>IE Pilot Burren Ge...</td>
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<tr>
<td>IE Pilot Irish Her...</td>
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<tr>
<td>IT Pilot ARFA - int...</td>
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<tr>
<td>IT pilot City of Pal...</td>
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<td>PT-SP Pilot 2nd g...</td>
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<tr>
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5. Country

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</tr>
<tr>
<td>Spain</td>
<td>6</td>
</tr>
</tbody>
</table>
6. Which category best fits your current background?

- Private Sector/SME: 9
- Public Sector: 8
- Academia: 2

7. Which category best fits your status?

- Service/Application: 3
- User/Consumer: 14
- Data resource provider: 2
8.2 SmartOpenData – essentials

8. To what extent is your experience related with Open data? (No experience - Well experienced)

9. To what extent is your experience related with the Linked Data and Semantic technologies and their benefits? (No experience – Well experienced)
10. Which SmartOpenData component is relevant to you?

- Modeling framework: 4
- Linked Open Data: 4
- Architecture and S…: 3
- Pilots: 10
- Final user: 1

8.3 Pilot type

11. Selection of the pilot

- Czech Republic: 1
- Ireland: Environment…: 4
- Italy: Water Monitor…: 3
- Slovakia: Environ…: 2
- Spain & Portugal:…: 6
8.4 User satisfaction

12. Usefulness (very unsatisfied – very satisfied)

13. Confidence / Trustworthiness (very untrusted data – very trusted data)
14. Pleasantness (very unpleasant – very pleasant)

8.5 Usability

15. Accessibility (low level – high level)
16. Appropriateness (none – all)

17. Learnability (very hard – very easy)

18. Error protection (very few – very much)
8.6 Reliability

19. Stability (very unstable – very stable)

20. Safety (very unsafe – very safe)

21. Responsiveness (very unsatisfied – very satisfied)
8.7 Functional suitability

22. Fitting the purpose (very unfitting – very fitting)

23. Coverage (with limited coverage – with high coverage)

24. Business potential (weak – strong)
8.8 SmartOpenData – Understanding of its value I.

Does the SmartOpenData infrastructure or its pilots...

25. Help you get your job done?

<table>
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<tr>
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<td>Yes</td>
<td>5</td>
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</table>

26. Produce outcomes you expect or that go beyond your expectations?

<table>
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<tbody>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
27. Make your job or life easier?

- Partially: 10
- Yes: 5
- Not relevant: 1

28. Can you comment your choices?

- As it enables me to use less equipment, and get an accurate GPS. Also avoids duplication of sites and avoids uploading my reports manually.
- Lack of IT skills in general prevent me personally from fully engaging with the product
- It’s still a prototype
- We need a better resolution of the information to have a strong tool to use

8.9 SmartOpenData – Understanding of its value II.

Does the SmartOpenData infrastructure or its pilots...

29. Create the potential for further activities to be built upon these outcomes?

- Yes: 12
- Partially: 3
- No: 1
30. Would you use this product?

- Partially: 6
- Yes: 10

31. Would you pay for it?

- No: 8
- Yes: 8

32. Can you comment your choices?

- It depends. The option of partially for previous question is missing. NGOs vs. Commercial.
- Not in its current form. Should be provided as a free app to be promoted by public agencies in the area of heritage & conservation.
- I think the data should be free to use and have the possibility of implementation with the end users.
- I believe that the likes of the heritage council or the national monuments should pay and allow officers to use it.
- As previous comment.
8.10 Final comments

33. You have now reached the end of this survey: please provide any additional comments that you may have.

- The product should be completed with additional information and data sets about the monitoring of others environmental pressures sources in order to enhance its use among the stakeholders and guarantee a wider diffusion.

- Excellent!!!

- Thanks for this. I found many of these questions not relevant to my experience. I did not get to use the system or really see it in action. For the last series of questions, I marked the middle answer as I did not have any option to comment or mark 'don't know' or 'not relevant'. Overall I found the engagement on this project worthwhile and see potential to develop it further.

- Thank you for the great opportunity to develop a system for data collection that has a lot of potential.

- Very useful app needs more applications but I personally would only buy as a one off payment.

- Platform should be more user friendly. It is an excellent initiative by ARPA to open up data and connect with local administrations.

- I think that technologies provided by SmartOpenData project seems very high tech for organization of our kind, so it will take some time for usage in our practice.