

ANNUAL REPORT FROM STAKEHOLDER MANAGEMENT

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D2.1.1 ANNUAL REPORT FROM STAKEHOLDER MANAGEMENT

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Authors: Alberto Di Minin, Cristina Marullo, Andrea Paraboschi, Andrea Piccaluga (SSSA)
John O’Flaherty (MAC)

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EXECUTIVE SUMMARY

SDI4Apps aims to bridge the gap between the top-down managed world of INSPIRE, Copernicus and GEOSS and the bottom-up mobile world of voluntary initiatives and thousands of micro SMEs and individuals developing applications based on GI, by adapting and integrating experience from previous projects and initiatives to build a cloud based framework with open API for data integration, easy access and provision for further reuse. The solution will be validated through six pilot applications focused on easy access to data, tourism, sensor networks, land use mapping, education and ecosystem services evaluation. SDI4Apps is by definition a multi-stakeholder project: the Community Building activity will progressively involve external communities (users, groups of users, external stakeholders) in order to gain critical mass and foster the development of the the initiative.

At the end of the first year from the project start-up, this report provides the first SDI4Apps Stakeholder management assessment, which is referred to as internal or “core” Stakeholders Community. A map of stakeholders roles, competences, interactions and level of actual and future commitment is provided in the first part of the report. The second part will deal with relevant informations about the project evolution plan and the possible future scenarios.

Keywords: Stakeholder Management, Communities, Competences, Roles, Scenarios

1 INTRODUCTION

SDI4Apps is by definition a multi-stakeholder project, where 18 partners (public and private organisations), belonging to nine different nations and providing complementary expertises (both technical and non-technical), are cooperating in order to build a cloud-based framework with open API for data integration and to populate this ecosystem with six different pilot case studies.

If the consortium is initially focusing its efforts on creating a technological environment and finding a way to guarantee its operational sustainability, the success of the initiative will result from the interplay of both the internal stakeholders and the community of external developers that will “bring the platform to life”, populating it with innovative apps that will belong to the SDI4Apps ecosystem of third-party applications, extending the reach and the scope of the project and proposing multiple use-cases of the platform.

The second work-package of the SDI4Apps project is centered on Community Building and Social Validation. It unfolds along the whole 36 months duration of the project and deals with the complexity of building the multi-stakeholder community, both from an internal and external point of view, finding viable solutions to engage the consortium and fostering an active participation of the community members in two ways: by defining a proper methodology to assess the validation of the platform and by supporting it providing valuable feedbacks to the community of stakeholders.

Within this work-package, three yearly Stakeholders Management reports will be produced.

Stakeholders Management reports will deal with the three main steps of the SDI4Apps project’s evolution:

- *Year 1.* Data integration and infrastructure development- focus on Local Stakeholders Community. This will be the focus of this report.
- *Year 2.* Definition of the Open SDI4Apps Platform- focus on SDI4Apps Stakeholders Community Space
- *Year 3.* Dissemination/support for external developers - focus on SDI4Apps on-line and off-line Stakeholders Communities

Considering the evolution of the project’s stakeholder configuration, it is possible to derive the following three main milestones around which the reports will pivot:

- D2.1.1 (Mar 2015) mapping of local stakeholders roles and their interactions, gathering informations from the Consortium members;
- D2.1.2 (Mar 2016) mapping of the set of internal/external stakeholders involved in each pilot in order to build an evolution plan for the project management;
- D2.1.3 (Mar 2017) mapping of the set of external stakeholders involved in the platform and a set of scenarios gathering evaluation requirements other WPs.

The community building work of SDI4Apps unfolds in two iterative cycles. The first one, initiated at the project’s start-up, gathers the core SDI4Apps community around the shared objective of providing the initial state-of-the-art baseline and user requirements. It is expected that the first core “active” community will consist mainly of local stakeholders involved in the internal validation. The second cycle will begin when the whole new range of use scenarios will be triggered. It is expected that the unique opportunity of directly participating in shaping these processes and thereby helping to define the open SDI4Apps platform will attract a critical mass of participants and stakeholders to the SDI4Apps community space.

The goal of this first report is dealing with the first cycle: on one side we propose the methodology that will be use to produce the annual assessments and the criteria upon which the stakeholder management reports will be structured. On the other side we focus on the first phase of the project, the so-called start-up phase, testing our methodology and presenting the first year’s results. In this phase the community of stakeholders consists mainly of local stakeholders involved in the internal validation, and most of the work is dedicated to the technical development of the platform. Therefore the main focus of this document will be on mapping the internal or local stakeholders community.

This document is structured in this way: chapter 2 is focused on the description of the SDI4Apps Stakeholder management activity and on the methodology that will be used. Moreover, the interactions and interdependence of this WP with other projects WPs will be highlighted. Chapter 3 deals with the internal stakeholder assessment: in this section, a map of competences and interactions among the different stakeholders is traced, and the detailed result of an up-to-date survey on the internal community are presented and the main critical aspects are pointed out. In chapter 4 the criticalities are inspected in detail and possible solutions to solve them and to improve the interaction among internal institutions are proposed in order to get the network ready for the following phases of the project, when the community has to be structurally mature and ready to interact with a multitude of developers and external stakeholders. Chapter 5 will summarize the main findings, highlighting key recommendations to the stakeholder community.

2 SDI4APPS STAKEHOLDER MANAGEMENT

Stakeholder Management refers to a permanent monitoring activity of SDI4Apps Communities¹ throughout the evolution of the project's configuration, in order to map the main set of Stakeholders involved in each phase and to provide the project management with relevant informations about the project evolution plan and the possible future scenarios.

The “technical” evolution of the SDI4Apps pilots/platform development during the three years of activity will bring a “social” corresponding transition towards changing configurations of involved stakeholders (SDI4Apps Communities).

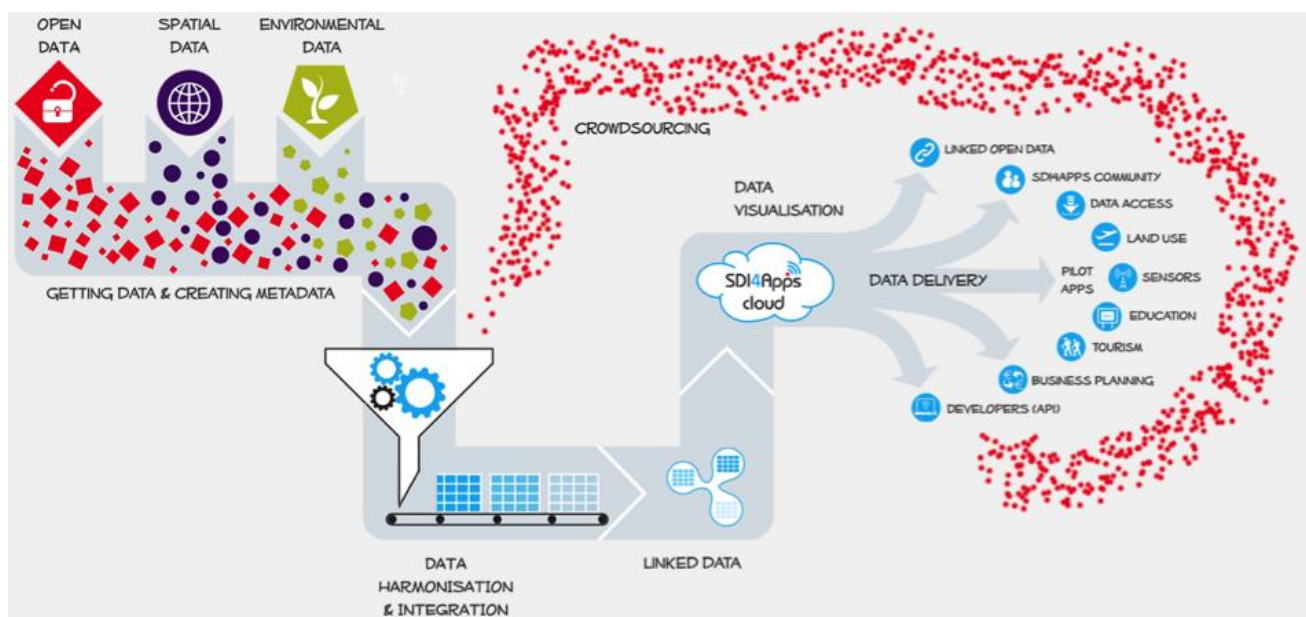


Figure 1: SDI4Apps platform

At the present time it is possible to profile three groups of Stakeholders are (or will be) involved in SDI4Apps Community Space, according to three main phases of the project evolution plan:

- Y1. Pilot development, data integration and infrastructure development - mainly local stakeholders are involved in the project, according to their different roles and competencies; stakeholders management activity will map internal stakeholders competences and their interactions, gathering informations from the Consortium members;
- Y2. SDI4Apps platform deployment - stakeholders management activity will deal with monitoring and mapping the set of internal/external stakeholders involved in each pilot in order to provide relevant information flows to the project coordinator and other WP leaders (in particular business model);
- Y3. dissemination/support for external developers - stakeholders management activity will map of the set of external stakeholders involved in the platform in order to provide a set of users scenarios for project sustainability over time.

¹ As defined in D2.2 “Social Validation Methodology” (:41) SDI4Apps Stakeholders Communities are “the associations, local NGOs, etc. who represent those directly affected by environmental change; they are involved primarily in information management, dissemination and awareness activities; these actors can be said to be “inside” the environment rather than observing it and are often the “champions” within SDI4Apps pilot communities”.

Annual Stakeholder Management Reports (D2.1.1 - D2.1.2 - D2.1.3) will assess the implementation of the three SDI4Apps Communities and will foster the process of managing the transition towards the SDI4Apps Community Space.

2.1 Methodology

During the first year of the SDI4Apps activity, the implementation of SDI4Apps “core” community was centered, on two objectives:

- providing the initial state-of-the-art baseline for the project.
- monitoring the evolution of local partners roles and their interaction in order to report useful evidences and critical aspects to the project management

The first core “active” community consists mainly of local stakeholders involved in the internal validation activities. In the first 12 month since the beginning of the project technical partners’ work was essentially devoted to pilots development, data integration and infrastructure development.

In this phase technical developers are playing a pivotal role for the whole organization, while non-technical partners work is essentially devoted to pilots validation.

The work of task T2.1 that directly generated this report aimed to map local stakeholders roles and their interactions, gathering informations from the Consortium members.

We developed an original methodology for Stakeholders monitoring activity based on periodical CAWI (Computer assisted web interviewing) survey through the use of dedicated software platform².

We surveyed the local Stakeholders Community through 19 dichotomous, likert and open-ended-response questions referred to 4 topics:

- Personal competencies and perceived role in the project
- Networking and collaboration
- Actual and future commitment in the SDI4Apps platform
- SDI4Apps sustainability over time

Moreover, following Social Validation Methodology indications, partners responsible for pilots deployment were asked to give a first indication of future user scenarios (D2.2: 56-58).

The unit of analysis was centered on partners’ competencies and role in the project (instead of being centered on single partners/entities).

We provided descriptive statistics for responses as follows:

- Dichotomous questions - frequencies of responses;
- Likert questions - frequencies of responses, mean and mode values, mean centered results, synthesis indexes based on weighted means;
- Open-ended responses - synthesis, listing, frequencies of responses (if applicable)

² www.surveymonkey.com

3 Y1: INTERNAL STAKEHOLDER MANAGEMENT ASSESSMENT

First Stakeholder Management Assessment (D2.1.1) provides a map of SDI4Apps internal stakeholders competencies and interactions in the start-up phase of the project.

In this section detailed results of an up-to-date survey on the internal community are presented and the main critical aspects for stakeholder management activity are pointed out.

The aim is twofold:

- to put into attention critical issues in community building activity to be monitored over time
- to provide relevant feedbacks inside WP2 and outside WP2 for project management activity (WPx) and business model planning (WPx).

3.1 The SDI4Apps local community

The SDI4Apps Local Community is represented through the following Internal Stakeholders map.

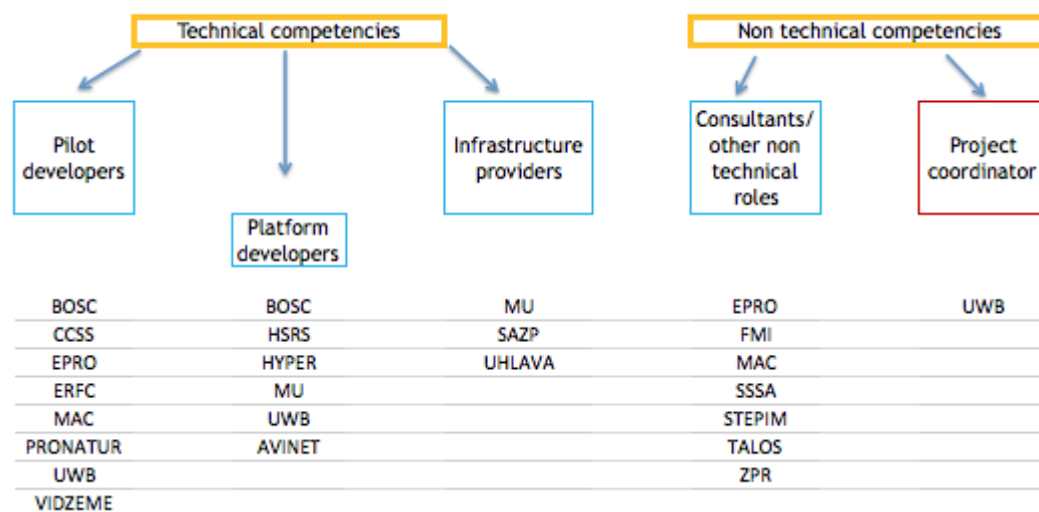


Figure 2: SDI4Apps Internal Stakeholders map

The map identifies 5 relevant groups of partners in the “core” community, as referred to their actual role in the project, according to 2 macro-groups of competencies.

- technical competencies - pilot developers, platform developers and infrastructure providers
- non technical competencies - project coordinator, consultants, other members with non technical roles

According to personal competencies and to the level of engagement in the project (as represented by the tasks they’re assigned to) each of the 18 consortium members may play one or both the roles: moreover,

roles may change during the project evolution³. This is especially the case of technical partners often playing non technical roles, in order to give feedback to Community building activity, project management activity and business planning activity.

Partners' roles across WPs are represented in Figure 3.

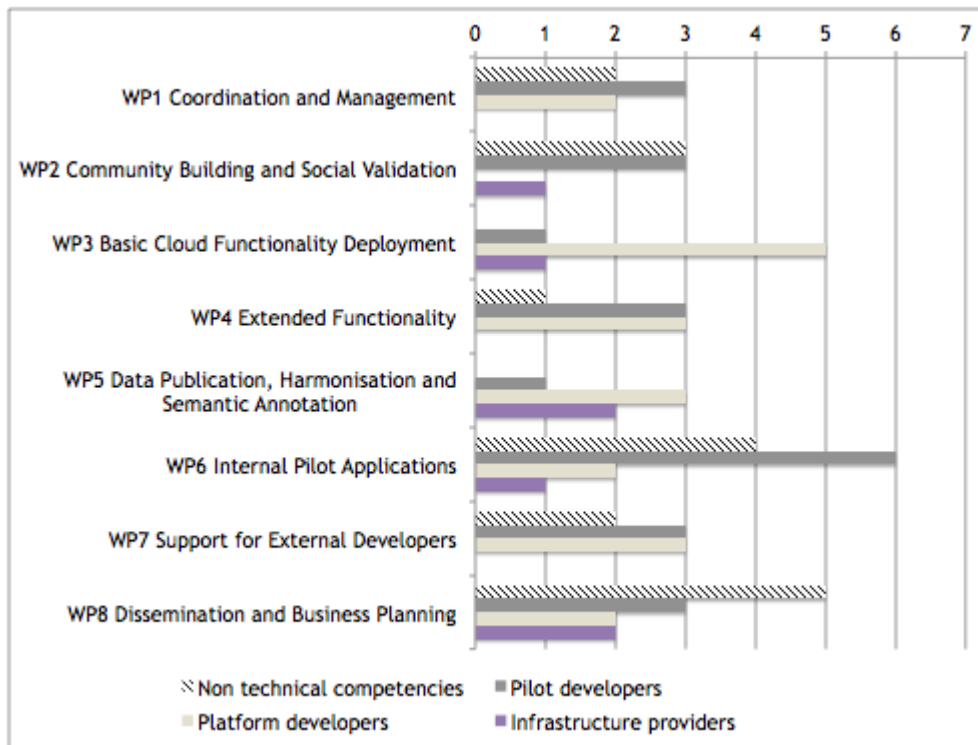


Figure 3: Roles of the partners across WPs
(number of partners involved in each role)

The map provides first evidence of pilot developers' pivotal role in the first year of the project. As expected technical partners are actually involved mainly in internal pilot development and extended functionality, and collaboration with platform developers is expected in defining support for external developers.

Moreover, partners with technical competencies play an active role even in non-technical WPs especially WP2 (Community building and social validation) and WP8 (Dissemination and Business planning).

³ In the project startup non technical partners such as Vidzeme and Uhlava played an active role as co-responsible partners for pilots development (as related to data providing and validation activities in the designing phase). In the next years it is expected that their role will be qualified as non-technical.

3.2 Collaboration and Networking

At Year 1 from the project's start-up almost all technical and non-technical partners were engaged in internal validation activities.

According to their role in the project, partners were asked to evaluate the perceived intensity of collaboration (co-working) with the project coordinator, partners involved in the same WP and other partners working in different WPs respectively. The evaluation was based on a Likert scale ranging from 1 (null collaboration) to 5 (very high collaboration).

For reporting purposes we defined:

- **Internal collaboration** as the intensity of information flows and networking among partners working in the same WP;
- **Collaboration with PC** as the intensity of information flows to/from the Project Coordinator;
- **External collaboration** as the intensity of information flows and networking among partners and other members of the Consortium working in different WPs.

Figure 4 highlights that in the first year collaboration paths strictly followed formal roles distribution. As expected, collaboration with PC (which role was mainly devoted in managing the start-up phase, by providing background information to all the partners) and WPs internal collaboration intensity were the highest.

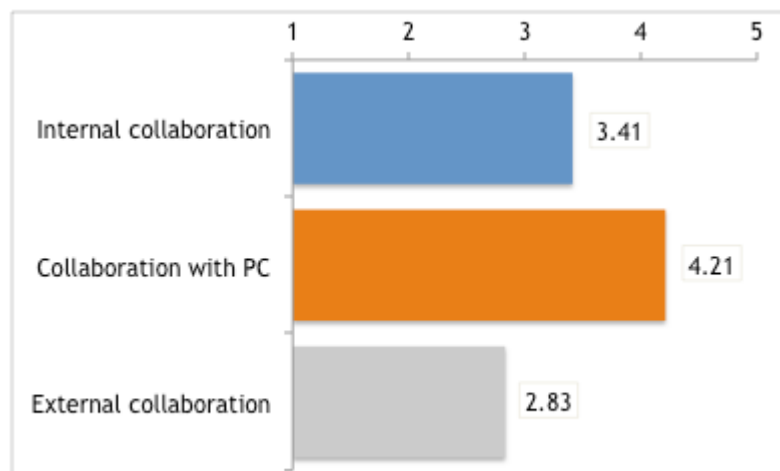


Figure 4: Perceived intensity of collaboration among partners during the first year of the SDI4Apps project
(mean values)

Perceived external collaboration (i.e. collaboration among partners and other members of the consortium working in different WP(s)) was sufficient but quite lower instead, showing a mean value of 2.83.

This result reflects normal practice, since in the first year of the project the priority was assigned to technical activities concerning mainly pilots development, data integration and infrastructure development.

For these reasons we can expect that most technical and non-technical activities were still played “internally” with respect to WPs. From a social perspective, Community building is still at the beginning of

its first cycle and most partners are involved in internal validation activities as formal WPs tasks. Nonetheless, we expect the grey row to increase in time, as data integration activities will be performed and the infrastructure will be tested.

In this early stage of the project development, the intensity of *external collaboration* across partners shows the highest values (over the general mean) for pilot developers and partners playing non technical roles.

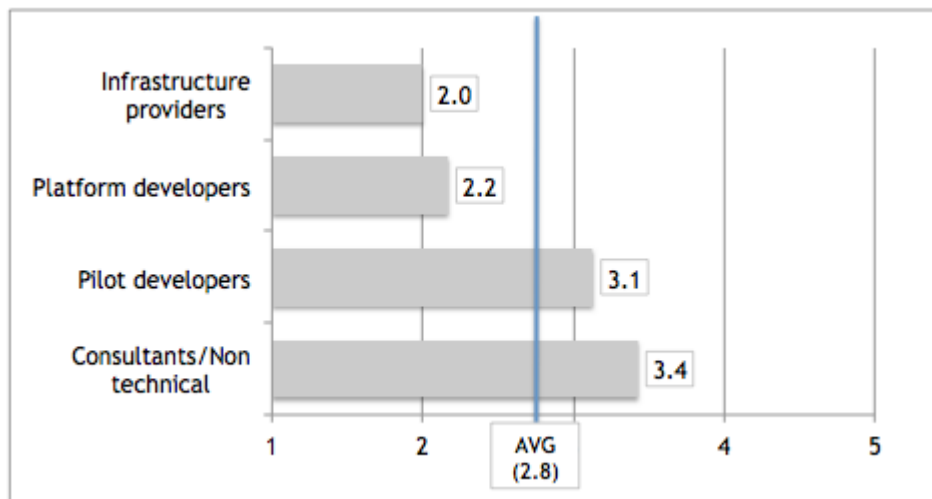


Figure 5: External collaboration among partners according to their role in the project during the first year.
(mean values)

This result reflects the effective flow of information feedbacks among non technical partners and pilot developers, mainly devoted to actual internal validation activity.

Pilot developers (and some of non-technical partners) are actually involved in dissemination activities too, mainly related to hackatons and workshops held to illustrate project objectives, the central role of users in it, and the means of participation in the on-line and off-line communities.

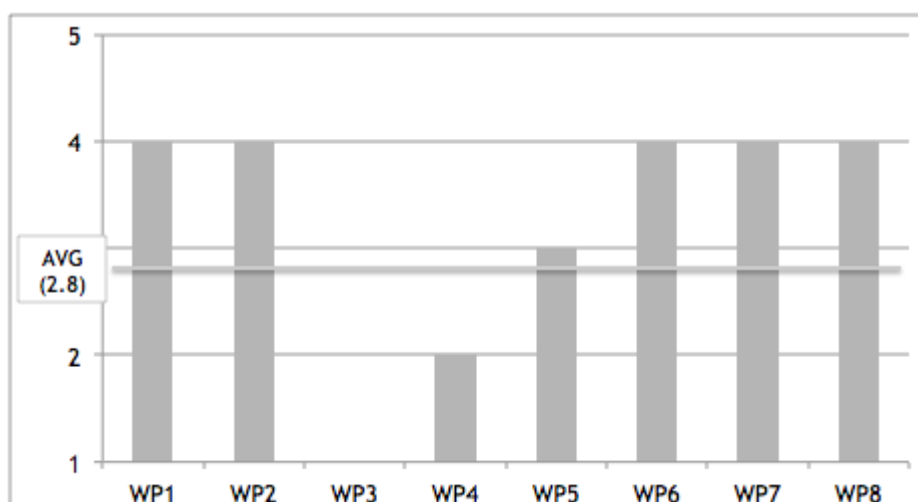


Figure 6: External collaboration across WPs
(mode values)

The mode values of external collaboration intensity across WPs are strictly related to the evolution of each project phase over time. External collaboration intensity show infact high values (4) for full-running WPs. In this stage social activities are reflecting the degree of evolution of technical activities.

We expect that this variable will show a huge time-related variability, and for this reason external collaboration needs to be constantly monitored over time: further steps and in particular cloud testing and API building will rapidly increase the intensity of interaction for the related WPs.

From the perspective of non technical activities, Figure 6 shows a satisfactory degree of collaboration among partners in the project.

Finally, an internal focus on single pilots shows two groups with a different level of “social maturation”, as related respectively to the definition of end users categories and the enablers, in collaboration with partners playing non-technical roles.

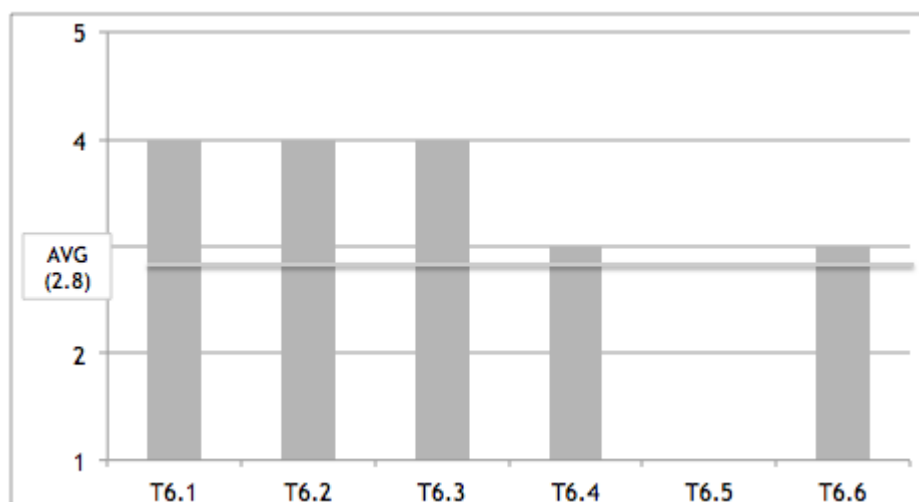


Figure 7: External collaboration across pilots
(mode values)

Regardless of the degree of technical development, other pilots are still in an earlier (but sufficient) social maturation stage, since they are much concerned with the first stage of users categories definitions. For the same reason, we expect their degree of external interaction to rapidly grow up in time.

Networking activity among partners was investigated by the mean of social network analysis based on measures of degree of single interactions between each partner and the others, measured in a Likert scale ranging from 0 (no interaction) to 5 (full interaction), and independent from the nature of information exchanged (technical vs. non technical).

Results are reported in Figure 8, in which the size of groups (number of partners playing a defined role) is represented by bubbles, and ties among groups are represented by lines. The weight of the lines is related to the intensity of ties (mean of interaction scores), while the arrows represent the direction of information flows, as reported by each group of partners. We intentionally excluded single partners responses in order to avoid results to be influenced from one-response bias.

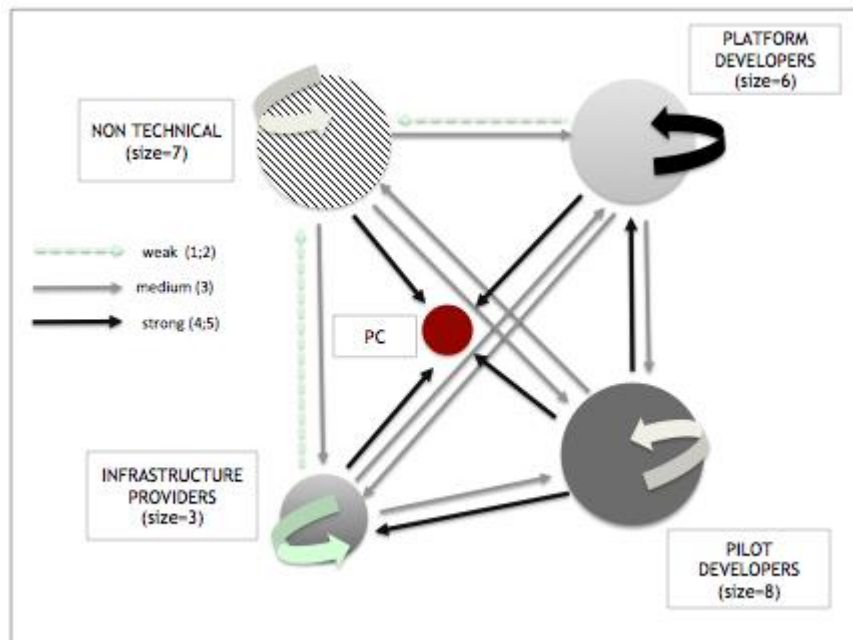


Figure 8: Interaction and networking according to partners' roles during the project's first year
(mean values of ties according to direction)

As expected, in the first year of the project execution all groups of partners in different roles claim a strong level of interaction with the PC, mainly related to reporting activities for coordination purposes. We do not expect this result to change over time.

The 8 pilot developers are actually playing a central role in the project social network, claiming a strong interaction both with platform developers and infrastructure providers, and a medium level of interaction with partners playing non technical roles and essentially involved in internal validation activities.

By the contrary, the other two groups of partners with technical competencies (platform developers and infrastructure providers) claim a lower-medium-mutual level of interaction with other technical partners and a weak level of interaction with partners playing non technical roles in this stage of the project.

We expect that the strength of ties among technical and non technical partners will remain on a medium level over time, which can be considered the basic level required to provide complete information feedbacks to dissemination and business planning Work Package (WP8).

Finally, and with respect to interaction within groups, platform developers actually show a strong intensity of internal interaction, while weaker social ties are connecting infrastructure providers at the moment.

At this point pilots are at the center of communication channel, and this is in line with current development strategy of the project.

In Figure 9 the graph related to social networking among partners is presented across their tasks in the project. As expected, a strong interaction is claimed by both WP leaders and other partners involved in WPs with the project coordinator.

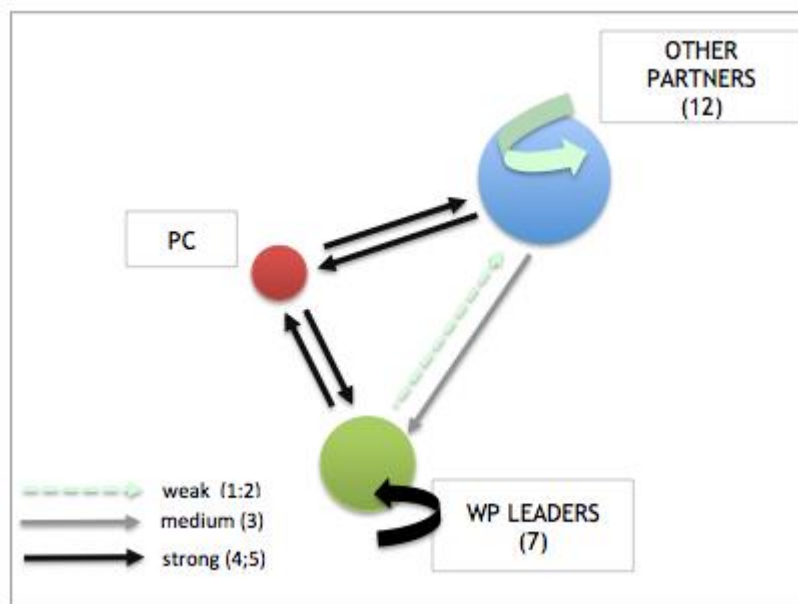


Figure 9: Interaction and networking according to partners' tasks
(mean values of ties according to direction)

More in detail, we find strong levels of interaction among WP leaders in the project, but weak ties link WP leaders to other partners in the project. Interaction among partners not involved as WP leaders is still weak at the moment, they rely more on partners responsible for WP coordination or to the PC as well.

3.3 Internal Stakeholders commitment

Topics related to Stakeholders commitment aim to monitor partners' actual interest the project success and future personal commitment to guarantee the SDI4Apps platform sustainability over time. According to their role in the project, partners were asked to evaluate their actual and future commitment to the SDI4Apps project as based on a Likert scale ranging from 1 (null) to 5 (very high).

For reporting purposes we defined:

- **Actual commitment** as the degree of actual involvement in the SDI4Apps project, as measured in terms of time spent in doing activities, personal effort and general commitment to the SDI4Apps project)
- **Future commitment** as the degree of personal interest to guarantee the SDI4Apps platform sustainability after the end of the project
- **Overall commitment** as the average value of actual and future commitment of partners in the project

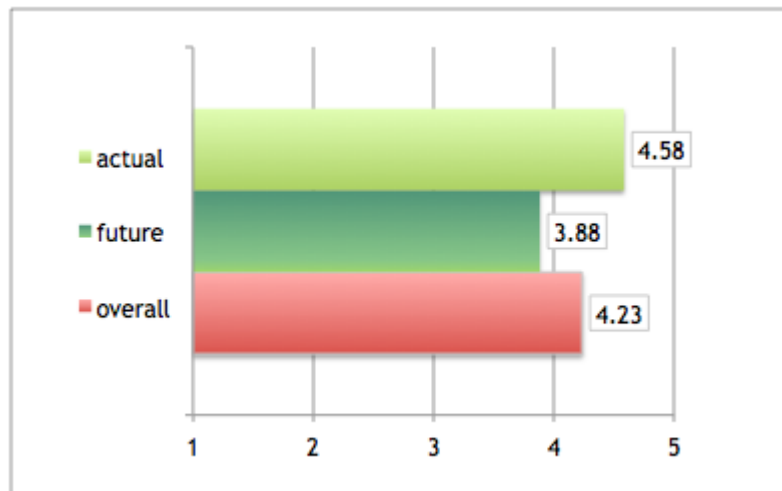


Figure 10: Stakeholders commitment in the SDI4Apps project, first year
(mean values)

The SDI4Apps local stakeholders community shows a strong overall commitment in the project: the mean of the 18 partners' evaluations reaches in fact the value of 4.23 over a maximum of 5. As expected, at the end of Y1 local stakeholders are deeply involved in the project activities -in terms of personal effort, time spent, interest in results-, regardless of the role played. We estimate that actual commitment variable (4.6) will show a very strong variability over time, and that the measurement may reflect the effort played at the moment by the different categories of partners. For example, at the time of the survey (February 7, 2015) platform developers claim the highest effort in actual project activities, probably due to the technical test methodology development (D3.5) running at the time.

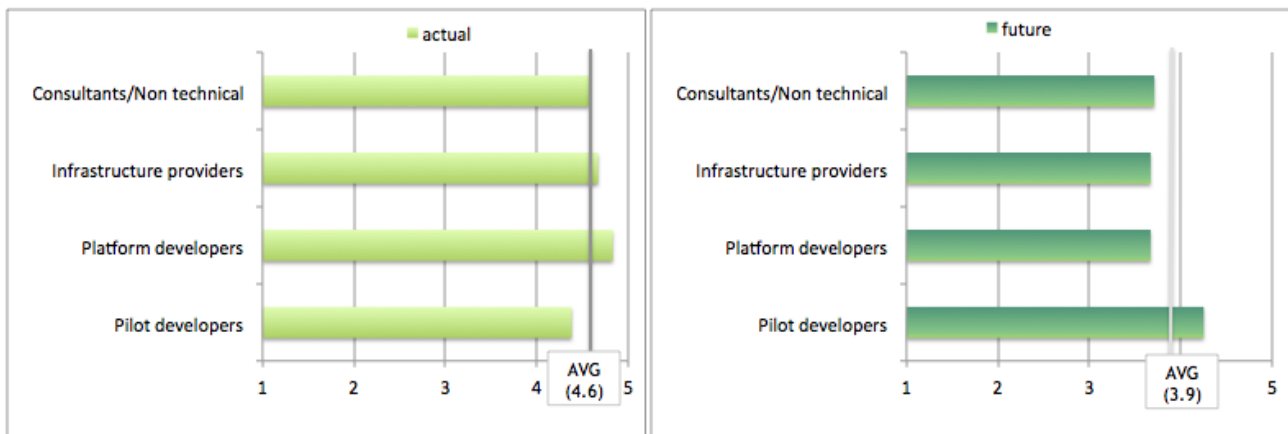


Figure 11: Actual and future commitment in the SDI4Apps project according to partners roles
(mean values)

With regard to future partners' attention to SDI4Apps sustainability, several differences are found according to partners' roles. Pilot developers show huge interest in the SDI4Apps sustainability after the end of the project: the SDI4Apps growing external Community of users is perceived as a fundamental asset. Less interest is shown by infrastructure providers and platform developers, mainly due to the huge uncertainty that characterizes early technology exploitation phases; in particular the final platform design, the platform business model and the role played in the future by each partner are still in a planning phase. These results are fully reflected in first scenarios tracked in the next paragraph.

4 THE SDI4APPS COMMUNITY BUILDING. FIRST SCENARIOS

As described in the DoW, the community building work (task 2.1) unfolds in two cycles.

- The first one, initiated at the project’s start-up, builds the core SDI4Apps community around the shared objective of providing the initial state-of-the-art baseline and user requirements. This cycle will require an active role of internal stakeholders
- The second cycle will begin when the whole new range of use scenarios will be triggered. This cycle will require an active role of internal/external stakeholders AND users.

According to Social Validation Methodology (D2.2:43) the SDI4Apps community will be gradually re-structured as a permanent learning community space “owned” by the community itself, with the primary aim of facilitating the diffusion and exploitation of project results through the adoption of the proposed metadata profiles, data models and interoperability standards in all participating stakeholder organisations. For these reasons, user scenarios trigger is a crucial phase to be started as soon as possible in order to bridge the two cycles of community building and to reach critical mass necessary to scale up the technology at the end of Y3.

In the first 6 months of the project SSSA identified and presented the following SWOT of the SDI4Apps platform for partners feedback at an early early stage in the project’s development⁴:

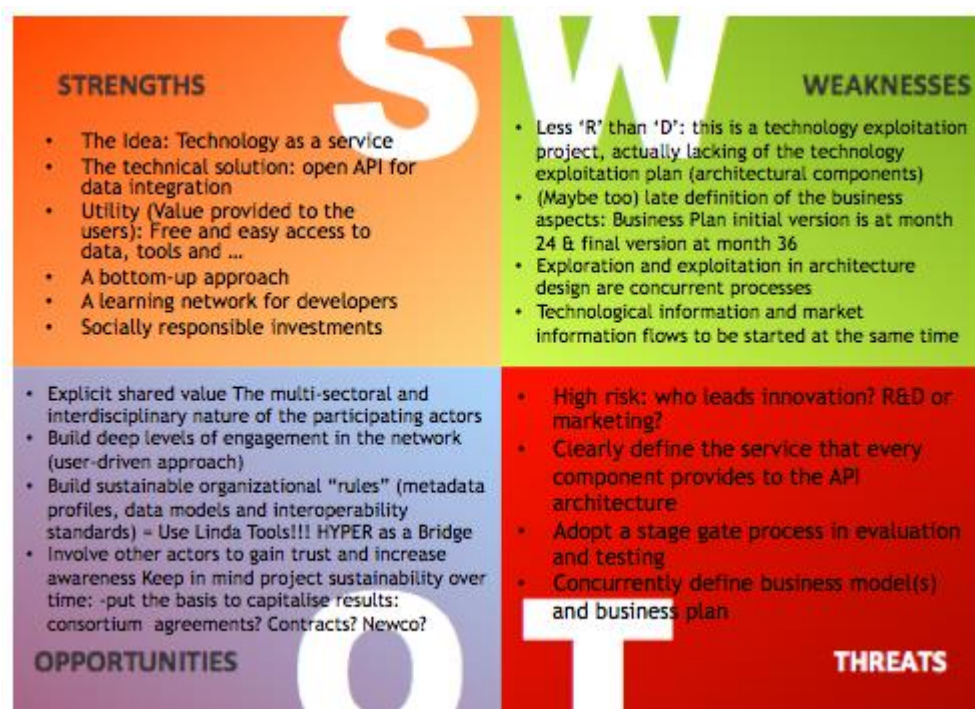


Figure 12: SWOT of managing the SDI4Apps Communities

⁴ Presented at the SDI4Apps Project Meeting in Jelgava, 17th September 2014 and reported in D2.2 “Social Validation Methodology, (:46)

After the discussion, short term goals in managing the SDI4Apps communities were identified in:

- providing a clear identification for the platform as an ecosystem of users
- define users' roles of engagement and how technical support will be provided

In the second semester of Y1 we tested partners' consensus around these topics, especially those concerning the SDI4Apps strengths/weaknesses with respect to other projects (namely Europeana, INSPIRE, Copernicus, GEOSS) and the opportunities to be exploited in the next two years.

Moreover, first users scenarios were asked to pilot developers with the aim of providing real-time feedback in the phase of technology exploitation, in order to encourage the adoption of a stage-gate process both for technology exploitation and for community building/business modeling.

4.1 Consensus among partners on SDI4Apps exploitation opportunities

From the perspective of the role played in the project, partners were asked to evaluate how much they agree with the following statements, in a Likert scale of 5 scores (Strongly Disagree, Disagree, Neutral, Agree, Strongly Agree).

- SDI4Apps innovation is in the technology: the ultimate end of the project will be to provide a leading-edge platform for open APIs
- SDI4Apps innovation is in the service: the ultimate end of the project will be to build a learning network for developers and public stakeholders
- SDI4Apps will provide explicit shared value: The multi-sectoral and inter-disciplinary nature of the participating actors is a great opportunity.
- We need to build deep levels of users engagement before the platform development (user-driven approach)
- We need to involve public actors to gain trust and increase awareness in potential end users
- We need to involve other commercial actors to create a valuable "brand" (exit strategy after the end of the project)
- We may capitalize our results by consortium agreements/contracts after the end of the project
- We may capitalize our results in a Newco after the end of the project

Results are reported in Figure 13 through a synthetic index based on weighted means of the reported scores.

Maximum degree of general consensus was reached around the nature of SDI4Apps innovation.

The platform is widely seen as a technology exploitation project strongly focused on the open service dimension; the ultimate end of the project will be that of building a learning network for developers and public stakeholders through the use of open source data and open licenses for apps development.

A general agreement is also reached on explicit shared value that the SDI4Apps platform will provide to external communities due to the multi-sectoral and inter-disciplinary nature of the participating actors.

User-driven technology exploitation is evaluated as of the most important strategic issues for the SDI4Apps project: the technology development itself will have an open business model in order to reach critical mass to scale up the technology at the end of the project. Building trust is an essential element in this scaling up process and partners agree to involve public actors both as data providers and as leaders of dissemination activities, in order to increase awareness in potential and users and build trust in the platform.

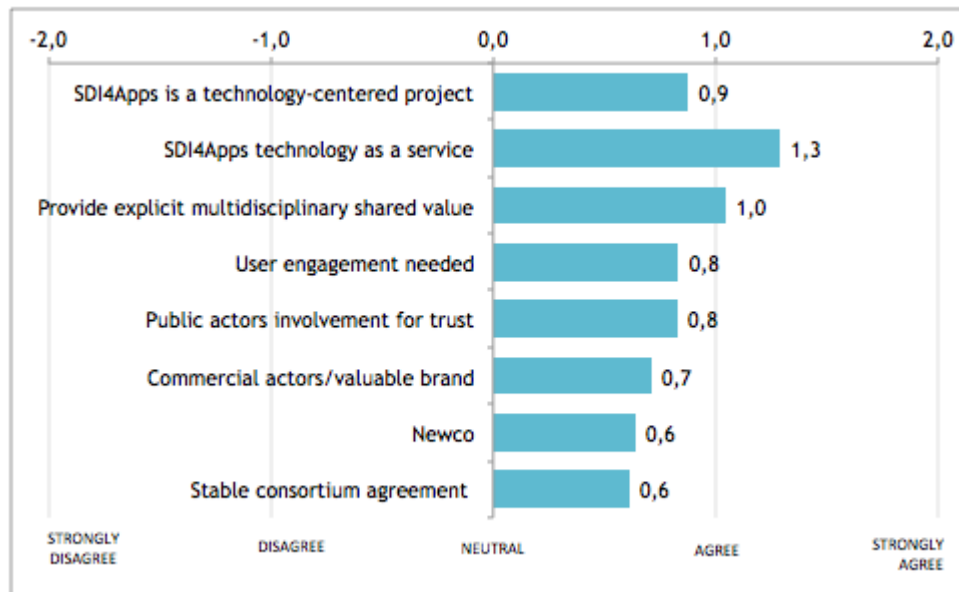


Figure 13: Consensus among partners on SDI4Apps exploitation opportunities
(Synthetic Index based on weighted means)

Further exploration on partners' consensus shows some interesting details: pilot developers stress the service dimension of SDI4Apps platform, while other actors converge most on the technology option. These differences will play an important role in the SDI4Apps business model design (WP8 - D8.5.1 D 8.5.2). Given that the overall goal of the project is that of bringing together technical and non-technical competences, it is important to clearly define the service dimension that every component will provide to the platform.

We explicitly recognize two dimensions as sources of revenues to be taken into account:

- the pilots dimension - data providing and software development services
- the platform dimension - personalized toolboxes and infrastructure services

Each dimension will represent a different business model originating from the project, since they capture different value dimensions from the project and are targeted to different markets (e.g. public bodies in the first case, big corporations in the second).

Moreover, figure 14 shows that trust building and users involvement are items supported mostly by non technical partners and pilot developers, while platform and infrastructure developers converge towards the need to involve other commercial actors to create a valuable "brand".

This conclusions will be further explored in the scope of the project business plan.

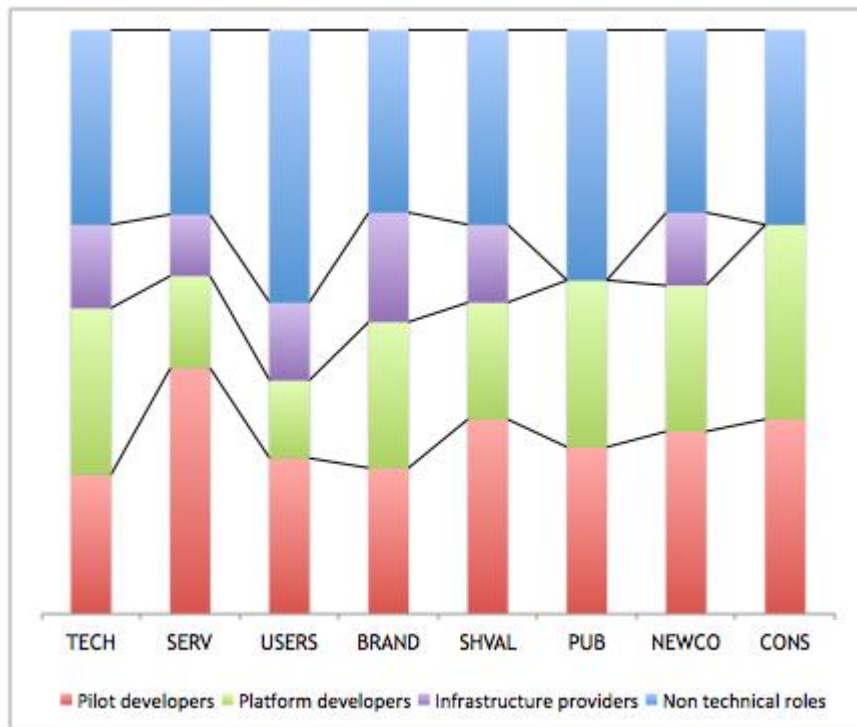


Figure 14: Consensus on SDI4Apps opportunities across partners role
(Shares of agree-strongly agree responses for each item)

4.2 Pilot users scenarios

T6.1 Easy Data Access	T6.2 Open Smart Tourist Data	T6.3 Open Sensor Network	T6.4 Open Land Use Map Through VGI	T6.5 Open INSPIRE4Youth	T6.6 Ecosystem Services
Public sector bodies	App developers in cultural heritage	Farmers using precision farming tools	Providers of tourism services	Citizens with interest in environment	Citizens
National Parks Wildlife Service (NPWS)	GEO ROUTES Cultural Heritage	Agriculture business consultants	Landscape and nature protection domain	Students	Public sector bodies
Heritage Council	Visitors / Tourists / Travellers	Farmers associations	Urban and spatial planners	Public institutions	App developers in cultural heritage knowledge domain
National Monuments Service	Providers of tourism services	Agriculture Universities and research institutions	Visitors / Tourists / Travellers		
Geoparks Network	App developers for the tourism sector				
Enterprises, Companies, SMEs and Farmers	Landscape and nature protection domain				
Burren GeoPark	Public Institutions				
Citizens interested in their local heritage	Urban and spatial planners				

Figure 15: First users scenarios for SDI4Apps Pilots
(most cited items are reported in bold)

Considering the 6 pilots that will be developed internally by the consortium, we asked members to identify, within each area of application, the main stakeholders who will be involved. This preliminary results highlight that the number of perceived stakeholders is not homogeneous across the six areas. It will be particularly useful to confront how this picture will evolve with time, along with the technological maturation of the project and the direct involvement of the external communities.

4.3 Platform scenarios

In order for the SDI4Apps platform to be a long-lasting and sustainable initiative, members of the SDI4Apps consortium were asked with an open question to identify the main dimensions to be taken into account for the project's sustainability. Figure 16 summarizes the main outcomes.



Figure 16: Platform sustainability scenarios and approaches

The two main issues that we codified from the answers revolved around the organizational models of infrastructure ownership and the methods to engage the community of external developers. These two pillars are interdependent: a platform could not last if there is not a clear vision regarding the ownership and the technological maintenance or if the community does not participate in the co-creation process.

Considering the first aspect, the proposed solutions can be clustered in top-down and bottom-up approaches. Some consortium members agree that a Newco should be funded in order to take care of the infrastructure and technical maintenance over time, while other members opted for a bottom-up approach where the community itself owns the platform and may eventually rely on an external partners for technical maintenance. In this second scenario it is important to establish a proper code of conduct in order to regulate the commercial exploitation of the software by third parties.

The second pillar is related to the engagement of the community. Within this category, online training tools (like forums, wikis, newsletters, social media) were identified as crucial to keep the community of developers pro-active, complemented by in-person events (meetings, conferences, hackatons, live demos),

that can help the group to produce new ideas and collectively find new domains of application for the technology. This second pillar needs a clear regulatory framework to maximise the participation while setting a common vision and rules of engagement.

4.4 Perceived Strengths/Weaknesses as related to other projects

In conclusion, the consortium members have been asked to identify the main strength and weaknesses of the SDI4Apps project with respect to 4 successful similar projects, namely Europeana, INSPIRE, Copernicus and GEOSS.

The results have been collapsed and are summarized in Figure 17.

	STRENGTHS	WEAKNESSES
TECHNICAL DOMAIN	<p>Interoperability and versatility of data inputs</p> <p>Models and architecture is tested in practice</p>	<p>Data model still not well defined</p> <p>Data quality still too low</p>
ORGANIZATIONAL DOMAIN	<p>Openness to the external community benefit both the consortium and the community itself</p> <p>Excellent networking and competence exchange opportunity for consortium members</p>	<p>Low familiarity of many partners with previous projects</p> <p>Organizational complexity due to the number of partners involved in the initiative</p>
PROJECT'S IMPACT	<p>Project versatility</p> <p>Practical orientation of the project</p>	<p>Limited time frame</p> <p>Lack of political/legislative support may limit the number of potential users</p>

Figure 17: Perceived SDI4Apps strengths/weaknesses as related to similar projects

It is possible to classify strengths and weaknesses in three main categories. The first domain is a technical one, strictly related to the technological platform development, where interoperability and versatility of data inputs and the possibility to test the models with real case studies represent positive aspects, while the uncertainties on data model and the low quality of data are constituting the main constraints. From the organizational perspective, multidisciplinary and heterogeneity of participants' competences represent both a strength, by augmenting the scope of the projects, and a point of attention, by increasing organizational complexity due to the difficulties in integrating and aligning the consortium's partners on a shared vision. From the project's impact perspective, the point of strength includes versatility and practical orientation, while the limited time frame and lack of political/legislative support can limit the project's output.

5 CONCLUSIONS

The goal of this first Stakeholder Management Report was to focus on the internal community working of the SDI4Apps project by describing the roles and complex interactions among the partners, mapping the network and taking a snapshot on how the project is perceived from the inside.

The community of partners is extremely heterogeneous, with two distinct competencies groups (technical and non-technical) and five different sub-roles (pilot developers, platform developers, infrastructure providers, consultants and project coordinator). Moreover, some of the 18 consortium member can play two or more sub-roles at a time, tightening the complexity of the network.

In the first year, results are showing that the community collaborated mainly in internal validation activities, with a pivotal role of UWB as project coordinator.

Pilot developers were at the center of the communication channel: being actors of full-running tasks from the beginning of the project they were able to maintain strong networking ties with other technical partners, and in particular to partners devoted to platform deployment, which is still in the design phase. Moreover, in the first year of the project, technical partners often played non technical roles, by giving relevant feedback to community building activity, project management activity and business planning activity.

This is an important issue, showcasing the relative dis-balance among the partners practical contribution to the project development at the current stage. At that same time this result outlines for an extended engagement of non-technical partners in the future development of the project. Indeed, the future evolution of the project foresees more balanced practical role division among the internal stakeholders within the consortium.

Overall, the commitment of the local stakeholders community is strong, and the focus on the sustainability of the project over time is particularly present among the members focused on developing the pilots. The members' visions converge on considering the SDI4Apps platform as a technology as a service to provide an explicit shared value to the external communities and on the need for building trust and a shared set of rules to properly manage the innovation ecosystem and engage the users in the value co-creation process.

The many inputs that we collected will play a crucial role in the business model development activities and they will constitute a valuable dashboard to monitor the evolution of the community along the three years in terms of interactions, vision, perception of the complexity and pro-activity in collaborating in order to learn reciprocally and to tackle the intrinsic complexity that will emerge.

In conclusion, we find two main dimensions to be considered as value sources for business modelling activity at the time:

- the pilots dimension - to be targeted to specific users or user-groups for evolution
- the platform dimension - toolkits and related services (infrastructure, support) could be customized for specific clients' needs (e.g. big corporations or public bodies who need to develop proprietary applications).

REFERENCES

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O’Flaherty J., O’Reilly,C, Keand E. ,Koskova I., Fryml J, Charvat K., Tuchyna M., Marullo C., Mildorf T., Cerba O. (2014) D2.2 “Social Validation Methodology” Copyright © 2014, SDI4Apps Consortium.

ANNEX 1 SURVEY QUESTIONNAIRE

1. Contact Information

Name:

Company/University:

2. Role in the project

I'm developing the API

I'm developing the platform

I'm developing one (or more) pilot(s)

I'm providing infrastructure

I'm a consultant

Other (please specify)

3. Name of the pilot(s) *pilot developers only*

T6.1 Easy Data Access

T6.2 Open Smart Tourist Data

T6.3 Open Sensor Network

T6.4 Open Land Use Map Through VGI

T6.5 Open INSPIRE4Youth

T6.6 Ecosystem Services Evaluation

Other (comments)

4. Pilot description (knowledge domain, technical specifications, potential benefits for end-users) *pilot developers only*

5. The community is in the pilot! Please add a list of your pilot potential end-users (e.g. app developers in cultural heritage knowledge domain, social care companies, public institutions...) *pilot developers only*

6. What kind of infrastructure are you providing? *infrastructure developers only*

7. May you describe your perceived role in the project? *non technical roles only*

NETWORKING

8. Please select the WP(s) you're mainly engaged in

WP1 Coordination and Management

WP2 Community Building and Social Validation

WP3 Basic Cloud Functionality Deployment

WP4 Extended Functionality

WP5 Data Publication, Harmonisation and Semantic Annotation

WP6 Internal Pilot Applications

WP7 Support for External Developers

WP8 Dissemination and Business Planning

Specific comments

9. From 1 (null) to 5 (very high), how do you evaluate the intensity of your collaboration with Partners involved in your WP(s)

Project Coordinators

Other members of the Consortium working in different WP(s)

10. From 0 (null) to 5 (the highest), how do you evaluate the intensity of interaction with each partner in SDI4Apps? (information and knowledge sharing, cooperation, co-development, communication flows)

1. UWB
2. HYPERBOREA
3. AVINET
4. CCSS
5. ZPR
6. MU
7. MAC
8. BOSC
9. SAZP
10. ERFC
11. E-PRO
12. VIDZEME
13. STEPIM
14. UHLAVA
15. HSRS
16. SSSA
17. PRONATUR
18. TALOS

11. From 1 (null) to 5 (very high), what's your interest in SDI4Apps success? (time spent, personal effort and commitment)

12. Please name 3 SDI4apps STRENGTHS with respect to similar EU projects that you know/you were involved in:

1 EUROPEANA

2 INSPIRE

3 Copernicus

4 GEOSS

5 Other (please specify)

13 Please name 3 SDI4apps WEAKNESSES with respect to similar EU projects that you know/you were involved in:

1 EUROPEANA

2 INSPIRE

3 Copernicus

4 GEOSS

5 Other (please specify)

14. How much do you agree with the following statements?

Strongly disagree Disagree Neutral Agree Strongly Agree

SDI4Apps innovation is in the technology: the ultimate end of the project will be to provide a leading-edge platform for open APIs

SDI4Apps innovation is in the service: the ultimate end of the project will be to build a learning network for developers and public stakeholders

SDI4Apps will provide explicit shared value: The multi-sectoral and inter-disciplinary nature of the participating actors is a great opportunity.

We need to build deep levels of users engagement before the platform development (user-driven approach)

We need to involve public actors to gain trust and increase awareness in potential end users

We need to involve other commercial actors to create a valuable “brand” (exit strategy after the end of the project)

We may capitalize our results by consortium agreements/contracts after the end of the project

We may capitalize our results in a Newco after the end of the project

Imagine to be at the end of the project

15. How to manage the SDI4Apps infrastructure ownership?

16. How to manage technical support to users? How could it be provided?

17. In your experience, what could be the best way to get users involved into the platform? (e.g. frequent data updates, online, forums, newsletters)

18. From 1 (null) to 5 (very high), what’s your personal commitment to guarantee SDI4Apps sustainability over time?

19. Enter here any additional comment

ANNEX 2 LIST OF ABBREVIATIONS

CAWI - Computer assisted web interviewing

Copernicus - the European Earth Observation Programme, used to be known as GMES

DOW - SDI4Apps Description of Work, Annex I to the Grant Agreement.

GEOSS - Global Earth Observation System of Systems

INSPIRE - INfrastructure for SPatial InfoRmation in Europe

PC - Project Coordinator

SWOT matrix - strengths, weaknesses, opportunities and threats matrix

WP - Working Package