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Sustainability Plans

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Executive Summary

This report presents a preliminary description of the OpenScienceLink Consortium activities regarding the sustainability plans of the OpenScienceLink services and overall project. The OpenScienceLink sustainability plan includes both mid-term and long-term activities and aims at ensuring that sustainability objectives are met. Within this context, the plan and its related activities and expected and/or achieved results will be reported yearly through the respective deliverables with D9.4.1 being the first one.

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1 Introduction

1.1 Sustainability plans objectives

The primary goal of the sustainability plans is twofold: to further extend the *use*, *implementation* and *development* of the OpenScienceLink platform and services, and to *propose specific* actions which promote its *further exploitation*.

Towards this direction, its main objectives include:

1. To ensure the further use of OpenScienceLink tools and services after the completion of the project works.
2. To propose both commercial and non-commercial cases for exploitation of the OpenScienceLink solutions.
3. To suggest mechanisms as well as development and implementation actions for extending and improving OpenScienceLink tools and services following the project's end.

Hence, the sustainability plans will attempt not only to provide the OpenScienceLink services beyond the end of the project (and the associated end of the EC funding), but also to enhance their functionality and increase their outreach.

1.2 Sustainability for OpenScienceLink

Overall, sustainability of the OpenScienceLink solution means achieving and ensuring:

- an efficient and effective set of activities for **boosting the population size** of the OpenScienceLink platform and services **end users**;
- **continuous improvement and extensions** of the OpenScienceLink tools and services taking into consideration their **competitive environment** and **technological advancements**;
- **intensified interest** as well as **boosted motivation** of the participating organisations to *use*, *promote* and *further improve* OpenScienceLink project tools and services.

Hence, the sustainability planning of the OpenScienceLink results will be performed at two parallel and complementary levels:

- Internally in the consortium organisations, i.e. through ensuring that all consortium participants will continue to use and expand the OpenScienceLink services following the end of the project. To this end, all consortium partners that will act as end-users of the OpenScienceLink services intend to gradually involve more users in the OpenScienceLink ecosystem.
- Externally through attracting and engaging third parties in the use of the OpenScienceLink services. Such an engagement will be also part of the project's business plans, including plans for the wider implementation and use of the OpenScienceLink platform and services.

2 The OpenScienceLink Vision and Targeted Results

2.1 Vision

OpenScienceLink envisions a novel eco-system for open access to scientific information, empowered by leading edge ICT infrastructures and encapsulating stakeholders associated with the production, use, monitoring and evaluation of openly accessible scientific and research information.

2.2 Exploitable OpenScienceLink Results

OpenScienceLink aims at the development of a series of novel services which *take advantage* of but also *boost* the **creation/production**, **publishing** and **use** of *openly accessible scientific findings, including data*. In order to realise these services, the project integrates a series of existing platforms – i.e. their tools, models and mechanisms. Within this context, the OpenScienceLink results (a detailed and updated list will be provided at the OpenScienceLink exploitation plan) include:

- **Data Journal**: OpenScienceLink will develop and manage a data journal which will encapsulate the OpenScienceLink services. This data journal will facilitate the presentation, validation, use, and re-use of datasets, with focus on publishing biomedical datasets that can serve as a source for simulation and computational modelling of diseases and biological processes. Computational modelling can bridge the gap between experiments and patients by integrating data obtained from experimental cell and animal based models to patients. Datasets availability is critical for training, optimisation and validation of 'integrative' mathematical models based on experimental (cell and animal datasets) and clinical observations (human datasets).
- **Data journal management services**: A series of tools and services allowing for the management of data journals which will publish openly accessible data about experiments, clinical observations and/or trials and making it available for aggregation, creation, testing and validation of models. These services will be enhanced with intelligent mechanisms enabling the identification of hot topics to be covered by upcoming data journal issues, as well as the linking of the published data sets with highly related openly accessible scientific papers. *Relevant/involved Stakeholders: Publishers, Editors, Researchers*
- **Scientific work peer review services**: These services cover and enhance the review process of scientific work. Focusing mainly on, but not limited to, the reviewers tasks, they provide reviewers with a set of tools which facilitate the scientific work's review process, reduce the temporal requirements and increase the confidence for the review outcome by offering them instant access to highly relevant, intelligently processed and filtered scientific work. They also assist editors in selecting the most appropriate reviewers for each paper based on the semantic analysis of the latter. A crowd-sourcing approach is followed for the evaluation of the reviews which allows for researchers to comment upon the reviewers work and the scientific work under review. *Relevant/involved Stakeholders: Researchers, Publishers, Editors*
- **Research Trends Detection and Analysis services**: These services semantically process openly accessible scientific work in order to detect and analyse potential research trends in the domain, including hot/novel scientific topics, research areas with the highest recent accessibility and published work, research trends associated with specific research, etc. These trend mining services will allow users to either view a trend analysis for a specific topic of their interest or be presented with a ranked list of research-wise "hot" scientific

topics and fields. *Relevant/involved Stakeholders: Research Agencies, Research Sponsors, Research Funding Authorities, Media, Researchers, Publishers, Editors, Universities*

- **Dynamic researchers' collaboration building services**: These services will present researchers with automatically inferred suggestions of potential research collaborations with other researchers, research groups and organisations based on the web "trace" of the scientists' work, including published papers, articles, data, research interests and involvement in research groups and communities. *Relevant/involved Stakeholders: Researchers, Publishers, Editors, Research Groups and Laboratories, Universities, Research Departments in Biomedicine and Pharmaceutical Companies*
- **Research evaluation (aka Scientometrics) services**: These services deliver and visualise evaluations of the openly published scientific work through not only conventional metrics (such as Impact Factor) but also novel ones. The latter take into consideration several aspects of a scientific work, including author, number of research work views, downloads and citations (as well as their source), level of dissemination, etc. *Relevant/involved Stakeholders: Researchers, Publishers, Editors, Research Groups and Laboratories, Universities, Research Departments in Biomedicine and Pharma Companies, Research Sponsors, Research Funding Authorities, Media.*
- **Semantic search services**: These mechanisms will offer unique capabilities associated with semantic search over a wide range of openly accessible scientific repositories in the biomedical domain. *Relevant/involved Stakeholders: Researchers, Publishers, Editors, Research Groups and Laboratories, Universities, Research Departments in Biomedicine and Pharma Companies, Research Sponsors, Research Funding Authorities, Media*
- **OpenScienceLink platform:** The OpenScienceLink platform itself will comprise an exploitable product of the project. This platform will encapsulate all the aforementioned mechanisms, models and services and will be customisable in terms of covered domain and set-up ecosystems.

Overall, each one of the above results can be in principle offered and exploited individually. Nevertheless, the OpenScienceLink partners will most probably consider creating bundles being composed of several of the above mentioned results and services. It should also be mentioned that although not in the core of its work, the OpenScienceLink consortium will consider offering a wide range of training, consulting, integration and customisation services to entities interested in the results of the OpenScienceLink platform. In terms of the IPR and legal management services of the project, they will accompany all the above services and products. Hence, the project partners will consider offering consulting services related to the legal and IPR aspects of open access.

2.3 Targets

OpenScienceLink aims at fulfilling a series of targets which are related to open access to scientific findings, including published papers and data. These targets include:

- **OpenScienceLink ecosystem expansion in terms of stakeholders as well as introduction of new roles**

  Concerning the involvement of a great number of stakeholders, the OpenScienceLink platform will be validated and the provided services will be evaluated by more than 1000 researchers in the biomedical domain as well as the involved publisher. During the project's lifetime, efforts will be made to include stakeholders from institutions, organisations and companies outside the project's Consortium, in order to evaluate the services on a broad scale and increase the exploitation potential of the platform.

  Moreover, although the OpenScienceLink ecosystem within the project's lifetime mainly includes researchers, reviewers, research groups leaders, publishers and editors, efforts should be made to also involve (either through direct use of the platform or through

demonstration of its functionalities and potential) other interested parties with different roles, including funding authorities, research departments in biomedicine companies, pharma and media. Moreover, in order to boost the exploitation potential of the platform, investigation of further new roles should take place.

- **Stimulating researchers and scholars towards open access community publishing**

  The project will attempt to trigger researchers and scholars to opt for open access publications as well as to produce and publish thematic data journals and articles. Hence, OpenScienceLink academic organisations shall be acting as publishers by producing journals and/or magazines. Efforts should be made in extending community publishing outside the OpenScienceLink consortium by attracting academics, researchers and universities (starting from the collaboration network of the OpenScienceLink partners) and engaging them into the OpenScienceLink eco-system, as part of the project's marketing strategy.

- **Attraction of publishers for joining the OpenScienceLink eco-system**

  Publishers will be attracted on the basis of being facilitated to decide upon the topic, produce and manage openly accessible data journals as well as enrich their journals with the review mechanisms and the scientometrics services.

- **Trigger the interest of conference organisers and journal editors**

  Conference organisers and journal editors will be approached regarding the OpenScienceLink review services on the basis of offering faster, reliable and more efficient review services as well as being assisted in the selection of hot conference topics and journal issues themes.

- **Attracting advertising and/or sponsorships**

  Efforts will be made to attract advertisements and sponsorships for the OpenScienceLink platform. R&D active industries, such as pharma, publishers and conference organisers will be approached for potential interest in sponsoring OpenScienceLink for further continuing its works after the project's completion or advertising their activities through the OpenScienceLink services and produced content (e.g., data journal).

- **Offering business and governmental subscriptions for the research trends and the scientometrics services**

  A variety of stakeholders, including funding agencies, ministries and the R&D department of companies in the field among others, are expected to be interested in the services which detect and analyse research trends in the biomedical domain and which evaluate the produced research and researchers through a multitude of factors. These services will allow for these stakeholders to shape their research strategies with more confidence and more efficiently. Within this context, OpenScienceLink will aim at providing (by charging with a fee) added-value services to such organisations, customised to their needs and requirements (e.g., for specific research fields).

All the above targets contribute to the expansion of the potential customer and user base for the OpenScienceLink platform. Hence, they additionally comprise exploitation tools and will be sought for under the exploitation activities as well. Moreover, given their orientation, these targets allow for both joint and individual exploitation.

2.4 The OpenScienceLink Key Stakeholders

Given the variety of the OpenScienceLink services in terms of functionalities and targeted needs, a variety of entities are involved in the value chain of the aforementioned services, acting either as providers or as consumers.

Role	Description
OpenScienceLink Service Provider	It refers to the provider(s) of the OpenScienceLink services who will include – but will not be limited to – the OpenScienceLink Consortium. The role of the service provider is to integrate, deploy, host and manage the OpenScienceLink platform, including the services, models and underlying platforms and mechanisms.
Content Provider	They include organisations and individuals who contribute scientific data, articles and papers. Hence, potential such providers include; universities and research organisations offering their openly accessible scientific repositories and libraries, researchers and scholars providing their own data and papers, organisations (both research ones and publishing ones) contributing with their scientific data and libraries. Given that all the OpenScienceLink services strongly rely on accessing, processing and filtering scientific data, articles and papers, content providers comprise an important role in the OpenScienceLink ecosystem that strongly determines the success of the provided services. Openly accessible scientific publications, including data and papers, comprise the core content for the OpenScienceLink platform. However, subscription-based access to data will also be considered, if such data is expected to significantly boost the OpenScienceLink services and/or are evaluated as important for the services provided by the related stakeholders.
Publishers	They comprise one of the key users of the services and are met across all OpenScienceLink scenarios. Hence, the platform allows them to efficiently manage data journals, offer a rich toolset to the reviewers of the submitted papers and data, choose hot research topics for their journals, invite important scientists for editors to their journals and be able to evaluate their journals through a variety of factors. They could also act as service providers by offering the OpenScienceLink services related to the data journal management, the review process and the scientometrics. Moreover, publishers can also be content providers and depending on their business model they could be operating on open access or subscription-based access.

Role	Description
Researchers, Academics and Scholars	The OpenScienceLink platform is primarily targeting researchers, scientists and academics. They are expected to act as users in all 5 (five) pilots. The development of data journals with scientific research data sets will boost their research and will offer them important data, otherwise unavailable, for designing, developing and evaluating their models and mechanisms and for developing new research ideas. Investigation of research trends will allow them to more efficiently position their research and even develop novel research ideas. Suggestions of potential collaboration with other researchers and/or research groups will allow them to enrich their collaborations and will boost the produced research results. The use of more objective, representative and complete metrics for evaluating research output will boost the researchers' confidence related to the recognition of their work and their reputation building. Moreover, the collection and analysis of the state of the art and the progress in the field of their interest will be significantly facilitated and improved. Depending on the exploitation model and the pricing scheme, access to these services will be provided either for free or via subscriptions covered by their institutions and/or research organisations.
Reviewers / Evaluators / Referees	Evaluators of research work (including reviewers of research papers and data) will be provided with a series of tools and services allowing them to increase their confidence over their evaluation as well as speed up this process. Fast and intelligently filtered access to research papers and data will further facilitate their work. It should be noted that quite often this role is expected to be covered by academics and researchers. Access to the platform would be expected to be provided through the OpenScienceLink Service Provider or the publisher.
Research Organisations, i.e., universities, research institutes, research labs, research consortia	Universities, research institutes, research labs and research consortia comprise potential users of the OpenScienceLink services across all pilots and are expected to access them either through either the OpenScienceLink service providers or the publishers. They could also act as content providers, by offering openly accessible scientific papers, articles and research data.
Research Sponsors and Funding Agencies	Public and private funding authorities and research sponsors are also expected to participate in the OpenScienceLink ecosystem. Special interest is expected in the research trends detection and analysis services as well as the scientometrics services, as these entities could be using them as tools for evaluating research proposals in terms of scientific value and potentiality and for deciding upon their sponsoring targets.
Journalists / Press	Journalists and the press could be interested in the top research trends in an area so that they present them to the public or the top scientists in a field whom they could (attempt to) interview or write a story about. This way the platform will allow them to communicate important research outcomes more effectively and quite fast.

Table 1: OpenScienceLink key stakeholders

3 The OpenScienceLink services landscape

3.1 Open Access and Scientific Research

3.1.1 The overall open access landscape

A growth trend has been observed for the open access (OA) publication market over the past years. According to Laakso et al [1] open access publications production has increased more than 10 times within the past decade both in terms of articles and journals. In fact, their study indicates that OA is already in its consolidation period. Numbers are quite indicative. The directory of open access journals (DOAJ) [2] already includes more than 9800 journals and 1.5 million articles published from over 120 countries. OpenDOAR (Directory of Open Access Repositories) [3] has more than 2500 repositories listed, ROAR (Registry of Open Access Repositories) [4] presents information about more than 2500 repositories, while the ROARMAP (Registry of Open Access Repositories Mandatory Archiving Policies) [5] includes more than 440 open access mandate policies. The Directory of Open Access Books (DOAB) [6] includes more than 1645 Academic peer-reviewed books from 55 publishers. Moreover, the BASE (Bielefeld Academic Search Engine) search engine [7] which focuses on academic open access web resources has already indexed more than 56 million documents and 2700 sources [8]. HighWire Press by Stanford University [9] comprises an archive of over 2.3 million free full-text provided articles. In the biomedical domain, in particular, PMC (PubMed Central) [10] has already indexed more than 734000 OA articles with more than 1200 journals providing their content with immediate free access and over 970 journals offering all of their articles openly accessible.

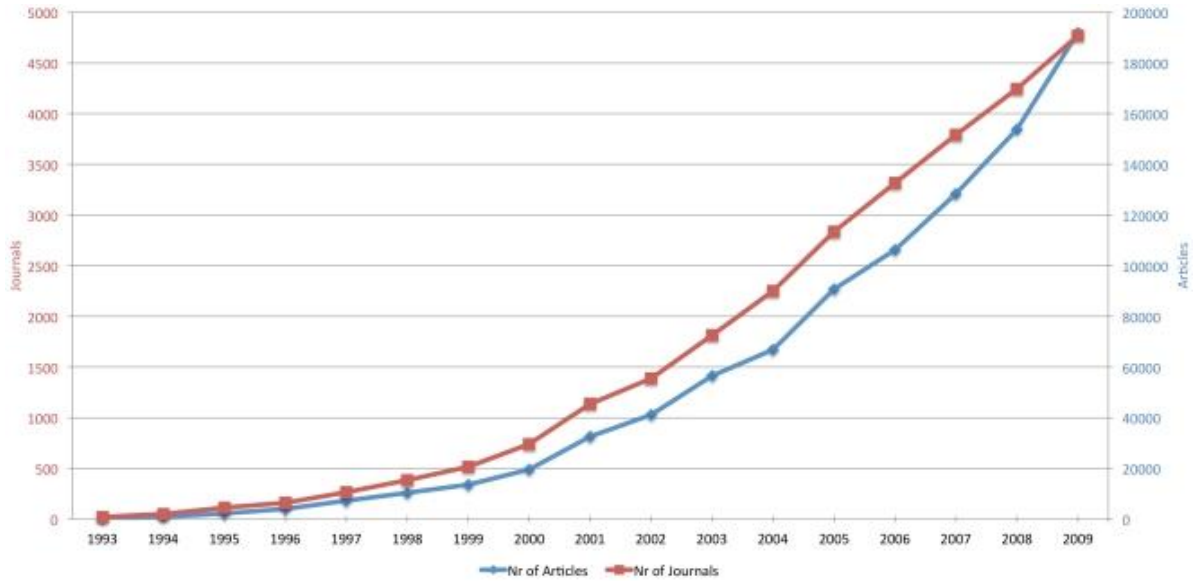

Figure 1: Open access publishing between 1993 and 2009 [11]

A study performed by Laakso et al [12] shows that although initially open access publishing has been flourishing in the world of universities and scientific societies, commercial publishers have become key actors on the OA scene, with an almost tenfold increase in the number of OA articles being published within a 6 years period (2005-2011).

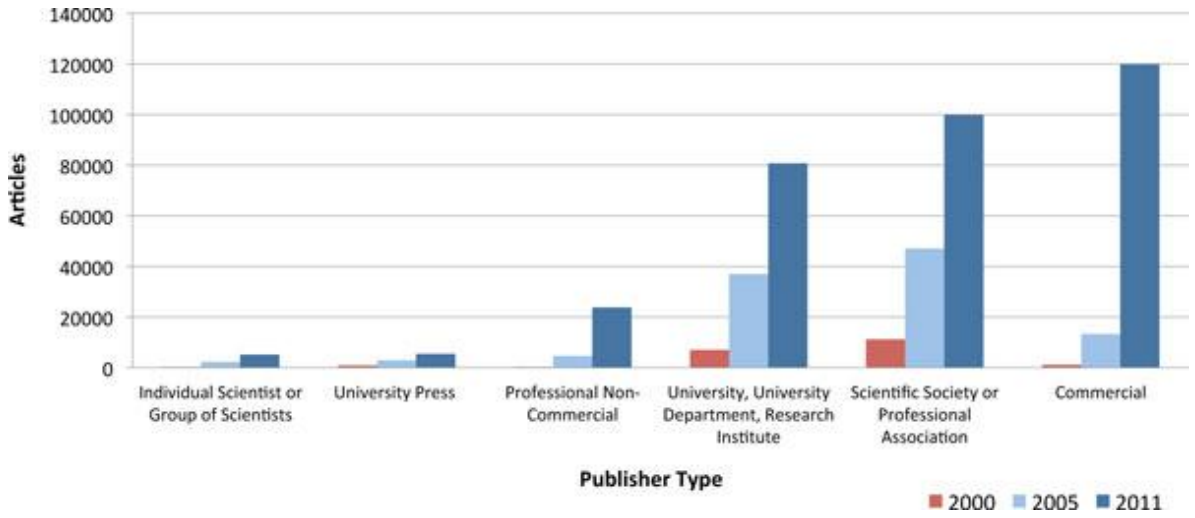

Figure 2: Different Publisher Types for Open Access Articles [13]

Given that profit comprises a fundamental concept in the commercial world and publication of research includes a series of costs, reconciliation of publishing fees for OA journals has been attempted through research and subscription funding. From this perspective, there are two main models for OA provision; green and gold OA [14]. In Green OA, scientists publish their findings through institutional or central repositories, or self-archiving (i.e., by placing their peer-reviewed post-prints on OA web pages). In fact, research institutions and funders, including the European Commission and Harvard, mandate their scientists to make their research findings publicly available in order to maximise the impact of the scientific work conducted. In Gold OA, publishing is done through OA journals, such as BioMed Central and PLoS, which may either allow publications for free or set a publishing fee to authors or their funders. Gradually more thorough classifications are introduced, such as diamond OA referring to publishing in journals which do not charge any fees to authors or readers [15]. Currently, one third of OA journals charge publishing fees, while others receive institutional, governmental, or third-party funding [16].

3.1.2 Open access and Biomedical Research

As presented in Figure 3, the volume of open access publications has tremendously increased for the major scientific disciplines, with the biomedicine domain showing a growth of more than 16 times in number of OA articles published between 2000 and 2011. In fact, according to a study in 2013, OA has shown tremendous growth in the biomedical field with more than 50% of OA articles coming for it [17].

One of the main topics for debate over OA publishing focuses on its assumed negative effect on the quality of scientific publishing. However, recent findings [18] show that OA journals, and in the medical and health domain in particular, which are indexed in Web of Science and/or Scopus and are published in the four largest publishing countries show the same scientific impact and quality with subscription journals. Interestingly, OA journals which pose article processing charges in order to fund publishing are on average cited more than other OA journals.

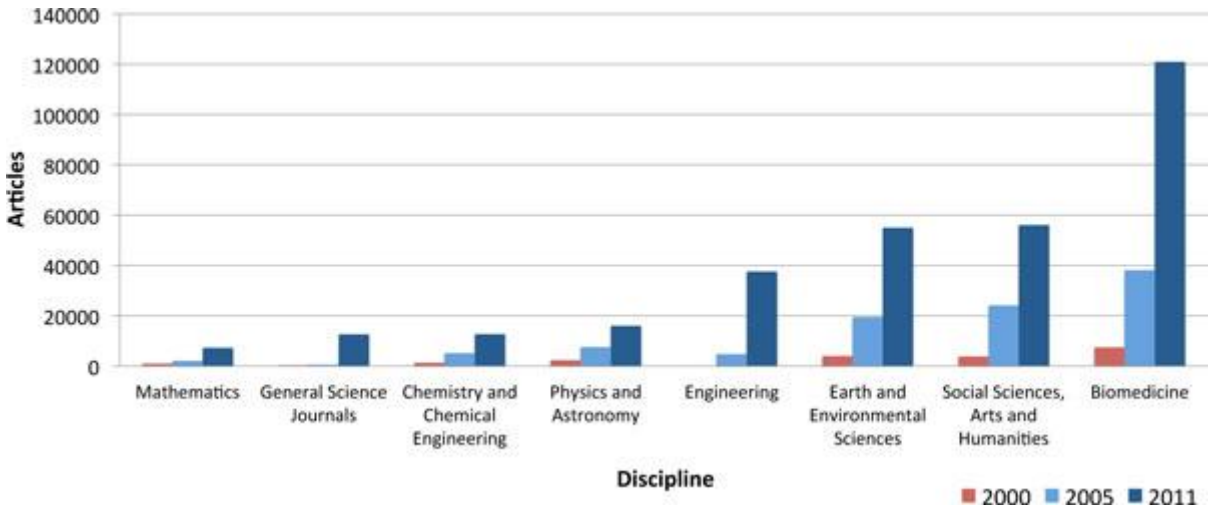

Figure 3: Open Access Articles across different disciplines [19]

3.2 Main players in the market

The following tables present an initial list of competitors for each OpenScienceLink pilot. Their purpose is to provide a first analysis of the competition regarding platforms and services which will also feed the exploitation strategy.

Pilot 1: Data journal development for publishing open access data sets

Competitor	Brief Description	Relation to OpenScienceLink
Scientific Data Journal (Nature Group)	Starting May 2014, this data journal will allow for the publishing, discovery and reusing of research data. http://www.nature.com/scientificdata/about/	Different scientific focus for the data
Linked Open Data from University of Münster (Germany) LODUM	LODUM aims at connecting different data sources across the 15 faculties and departments at the University of Münster through the implementation of Open Access and Linked Open Data principles across the university. http://data.uni-muenster.de/	Potential content source
OpenAire EU project	The FP7 project OpenAIRE aimed at offering the means to promote and realize the widespread adoption of the Open Access Policy by aggregating research publications which comprise European funded research output. OpenAIREplus, being its successor, further aims at linking this data to the accompanying research and project information, datasets and author information. Apart from the data, it also provides a series of functionalities such as statistics and reporting tools which can be useful to project managers. http://www.openaire.eu/	Potential Content source Planning to sign a MoU
re3data	It is a global registry of research data repositories from different academic disciplines which is funded by the German Research Foundation (DFG). http://www.re3data.org/	Potential Content source
myExperiment	It comprises a public repository of scientific workflows which is currently supported by three European Commission 7th Framework Programme (FP7) projects: BioVeL, SCAP and the Wf4Ever Project and the e-Research SouthandmyGridEPSRC	Potential Content source

Competitor	Brief Description	Relation to OpenScienceLink
	Platform grants. http://www.myexperiment.org/	
Open PHACTS	The Open PHACTS Discovery Platform integrates pharmacological data from a variety of information sources and offers tools and services for applying questions on this data with an aim to facilitate pharmacological research. http://www.openphacts.org	Potential Content source
Biodiversity Data Journal	The first issue of the *Biodiversity Data Journal*, featuring 27 articles, appeared in its final version in September 2013. BDJ is published by Pensoft Ltd., Bulgaria. http://biodiversitydatajournal.com	Potential Content source, if the OpenScienceLink domain broadens. Potential publisher and editor who could benefit from the data journal management and review services and additionally the trend mining and scientometrics services.
Geoscience Data Journal	At the end of November 2013, five articles appear on the website of the *Geoscience Data Journal*, including the lead editorial article [20]. The journal is published by Wiley. http://onlinelibrary.wiley.com/journal/10.1002/%28ISSN%292049-6060	
Journal of Open Archaeology Data	The *Journal of Open Archaeology Data* is published by Ubiquity Press. The first volume with nine articles appeared in 2012. As of end November 2013, volume 2 features two data articles. http://openarchaeologydata.metajnl.com	
Journal of Open Psychology Data	The *Journal of Open Psychology Data* is also published by Ubiquity Press. By the end of November 2013 the journal website provides access to two articles, one of which is the editorial article. http://openpsychologydata.metajnl.com	
GigaScience	It is a journal which publishes 'big-data' studies from the entire spectrum of life and biomedical sciences. It is with BioMed Central and supported by BGI – a Chinese non-profit organisation which claims to be the largest genomics organisation. It is indexed in the Directory of Open Access Journals (DOAJ), PubMed and PubMed Central.	Potential Content source, Publisher and Editor potentially interested primarily in data journal management and review services and additionally in the trend mining and scientometrics services.
Genomics Data	It is an open access journal published by Elsevier which covers all aspects of genome-scale analysis, including nucleic acids analysis, microarray and next-gen sequencing data and all organisms.	
Journal of Open Public Health Data	It is a data journal which is published by Ubiquity Press. Its main focus is on data with reusability potential or which can be used for research validation purposes.	
Scientific Data	It is a data journal to be published by Nature Publishing Group which currently focuses on datasets from the life, biomedical and environmental science communities, but is intended to cover a broad range of scientific disciplines. It has been scheduled to launch in May 2014. Datasets are not hosted by the publisher. Instead community-recognised data repositories are expected to store them, if available, or other repositories such as the Dryad.	

Table 2: Pilot 1 competitors

Pilot 2: Assisted Peer-review Process

Competitor	Brief Description	Relation to OpenScienceLink
EasyChair	EasyChair facilitates conference organisers in the refereeing process through: - management and monitoring of the program committee; - management of the access of PC members and referees to papers and conflicts of interests; - automatic paper submission; - paper assignment based on the indicated preferences of PC members; - submission of reviews; - notification of PC members, referees and authors via e-mail; - online discussion of papers; - the author response (aka rebuttal) phase, when the author can respond to the reviews; - automatic preparation of conference proceedings http://www.easychair.org/	EasyChair focuses on the management of the peer review process for conferences, with its main services being the mapping between submitted articles and members of the existent Program Committee of a conference. No intelligent mechanisms are provided, the articles are unlinked from literature and reviewers' selection is only based on their declared interests.
FluidReview	FluidReview is an application management and review system, which allows hosting peer reviews online for scholarships, grants, proposals, fellowships, journal articles, etc. It facilitates the appointment of reviewers for specific submissions or the entire collection and provides customized ranking and evaluation forms & tasks. Reviewers can perform their tasks collaboratively through comments and annotations. http://fluidreview.com	It mainly focuses on application and submission management, with the review process being facilitated mainly through customisable forms, storing of submission material and statistics (such as number of reviews under processing, etc.). No tools for comparing applications and no linking with or search through literature is provided.

Table 3: Pilot 2 competitors

Pilot 3: Research Trends Detection and Analysis

Competitor	Brief Description	Relation to OpenScienceLink
TechCast	TechCast offers online technology forecasts and technology articles on emerging technologies which are based on scanning of the literature and media, interview authorities, and other sources by their researchers in order to identify trends and background data on roughly 70 emerging technologies. TechCast also offers comprehensive technology consulting services as well as customized technology forecasting and studies. http://www.techcast.org/	It focuses on the technological world and provides standard lists for trends in specific areas. OpenScienceLink could actually be provided to the TechCast experts for facilitating their work in literature scanning and trend analysis.

Competitor	Brief Description	Relation to OpenScienceLink
The Millenium Project	**The Millennium Project** is an independent non-profit global participatory futures research think tank of futurists, scholars, business planners, and policy makers who work for international organisations, governments, corporations, NGOs, and universities. The work is distilled in its annual "State of the Future", "Futures Research Methodology" series, special studies, and integrated into this Global Futures Intelligence System. Its primary products include: - On-going assessment of the most significant long-range issues and opportunities, and focused analysis of policies and agencies to address them; - Communications network of futurists and scholars with an international futures research information system with public access; - Advanced training in the methodology and analysis of critical issues, opportunities, and challenges of the future. Moreover, it produces: - The annual State of the Future report which is based on integration of the Project's work as well as others' forecasts, and previous years' reports; - Special studies such as Future Issues of Science and Technology, Futures Research Methodology, Middle-East Peace Scenarios and Future of Africa; It includes discussion rooms and mailing lists and manages a coherent and cumulative process that collects and assesses judgments from over 3,500 people. http://www.millennium-project.org/index.html	It covers a wide spectrum of domains, from climate change and energy to health and peace, rather than focusing on one domain. It depends on experts input and analysis and provides a rather high-level analysis of trends and opportunities. OpenScienceLink is focused on the biomedical domain and provides flexibility in identifying trends with primary input found in literature and published scientific findings in general. Moreover, it provides great granularity concerning the trends identified, from fields (such as cardiology) to specific topics (such as a gene and its relation to a disorder). The OpenScienceLink platform could be potentially used by the Millennium Project as a toolset for identifying and analysing trends in the biomedical domain.
ArnetMiner	ArnetMiner provides hot topics based on data processed from the Web. Its trend identification is based on their Author-Conference-Topic (ACT) model, through which they automatically discover 200 hot topics from the publications. For each one of these topics, it offers word trends across the past years, popular phrases. It also provides a search for the trend analysis of a specific topic. Moreover, scientists are presented with the identified hot searches, hot topics and scientists for a specific topic. http://arnetminer.org/	It does not allow the researcher to customise their trend analysis but rather provides the same set of results for hot topics to all or presents the trend analysis for a topic that the user introduces to the platform. It focuses on the ICT domain.

Table 4: Pilot 3 competitors

Pilot 4: Suggestion of Researchers' Collaboration

Competitor	Brief Description	Relation to OpenScienceLink

Competitor	Brief Description	Relation to OpenScienceLink
Research Gate	**ResearchGate** comprises a social networking site for scientists to share papers, ask and answer questions, and find collaborators. It has been described as a mash-up of "Facebook, Twitter and LinkedIn" that includes "profile pages, comments, groups, job listings, and 'like' and 'follow' buttons". Members are encouraged to share raw data and results from both failed and successful experiments. Based on the scientist's profile, it regularly suggests papers of their interest for reading, which then the person may request from the author through the platform. Job announcements are also provided. It offers a series of statistics which can be shared in Facebook, LinkedIn, Twitter and g+. https://www.researchgate.net	Each scientist joining the portal is encouraged to enter information about their papers, including the document itself. Annotation of the papers is requested by their authors. Hence, it includes manual processes for its services provision. Linking among its members is based on declared relationships, based on their institutions, submitted paper keywords and manually entered research interests.
ArnetMiner	ArnetMiner provides search and mining services for researcher social networks. In particular, it creates a semantic-based profile for each researcher by extracting information from the Web and integrates academic data (e.g., the bibliographic data and the researcher profiles) from multiple source. Moreover, it analyzes and discovers patterns from the built researcher social network. The main search and analysis functions in arnetminer include: Profile search, Expert finding, Course search, Sub-graph search. http://arnetminer.org/	It is an interesting platform which allows for finding experts as well as comparing them based on a series of factors. Based on the person's profile it offers recommendation of collaborators. Although not a domain-focused platform, it mainly focuses on ICT.
MyScienceWork	MyScienceWork is a communication platform including more than 31 million open access publications from over 30 disciplines. It includes an international community of researchers, engineers, students and science communicators. Users are allowed to comment upon and annotate publications. Moreover, job announcements are available. http://www.mysciencework.com/#the-research-network	Contacts are suggested based on the profile that the researcher creates manually in the system. It does not focus on a particular domain. It processes data only from open access journals.
Academia.edu	Academia.edu is a platform for academics to share research papers and view analytics on their profiles, which include number of profile views, number of document views and followers. https://www.academia.edu	It is greatly based on manual data entrance on behalf of the researchers. It mainly focuses on publication sharing. It does not focus on a particular domain.
Methodspace	Methodspace is an online network of researchers for sharing research, resources and debates. Methodspace users have free access to selected journal articles, book chapters, etc. which highlight emerging topics in the field. http://www.methodspace.com/	Connection with other researchers is mainly done through discussions about topics and participation in fora. It does not focus on a particular domain.

Table 5: Pilot 4 competitors

Pilot 5: Evaluation of Research

Competitor	Brief Description	Relation to OpenScienceLink
Thomson Reuters Web of Science	Web of Science® provides researchers, administrators, faculty, and students with access to citation databases. Its content come from over 12,000 of journals worldwide, including Open Access journals and over 150,000 conference proceedings across more than 250 disciplines. http://thomsonreuters.com/web-of-science/	It presents evaluations based on citation metrics. The analysis provided is mainly on a journal basis. The OpenScienceLink models and evaluation services could be feeding the platform enriching the provided evaluation.
Thomson Reuters InCites	*InCites*™ is a customized, web-based research evaluation tool that allows researchers to analyze institutional productivity and benchmark their output against peers worldwide. With customized citation data, global metrics, and multidimensional profiles on the leading research institutions as well as with robust visualization and reporting tools, it allows for the creating and sharing of reports. Its main features include: • Comparison of quantitative and qualitative aspects of performance against other institutions and world and field benchmarks • Presentation of influential and emerging researchers and research trends • Identification of potential areas for growth • Monitoring of collaboration activity and tracking of new collaboration opportunities http://researchanalytics.thomsonreuters.com/incites/	It presents evaluations based on popular evaluation metrics. The OpenScienceLink models and evaluation services could be feeding the platform enriching the provided evaluation.
ResearchGate	It calculates a ResearchGate (RG) score based on the publications' views and downloads, who interacts with them and how often, the number of questions posed and answered and the number of followers. It also provides the scientist's positioning among its members in terms of the score in the form of a percentage.	The RG score includes a subset of the parameters that the OpenScienceLink will use for evaluating scientists. Moreover, it is rather rigid and does not allow for scientists to exclude a parameter that they do not consider important.
ArnetMiner	ArnetMiner presents researchers with evaluation for academics based on 8 measures; "H-index", "Citation", "Uptrend, "Activity", "Longevity", "Diversity, "Sociability", "New Star". Scientists in a field are ranked based on them. http://arnetminer.org/	It only provides scientists' evaluation. Although not a domain-focused platform, it mainly focuses on ICT.

Table 6: Pilot 5 competitors

3.3 Positioning to the Competitive products

Pilot 1: Research Dynamics-aware OA Data Journals Development (New Journal issue suggestion, Dataset submission, Dataset peer review, publishing, assessment and evaluation)

Service / Service Provider	OpenScience Link	Scientific Data	LODUM	OpenAire EU	re3data
OpenScienceLink Pilot 1 functionalities					
New journal issue suggestion	+	-	-	-	-
Dataset submission	+	+	+	.	-
Dataset peer review	+	+	-	-	-
Publishing		+	+	+	+
Assessment and evaluation	+	+	-	-	+
Focusing on the life sciences	+	+	-	-	-
Costs	-	+	-	-	-
Help/tutorials/documentation					
Online help	-	http://www.nature.com/scientificdata/about/	http://lodum.de/about/	http://www.openaire.eu/	http://www.re3data.org/faq/
Video tutorials	-	-	-	http://www.openaire.eu/en/support/video-tutorials	-
Contextual help	-	-	-	-	-

Table 7: Pilot 1 positioning of competitive products

Service Provider / Service	OpenScience Link	myExperiment	Open PHACTS
OpenScienceLink pilot 1 functionalities			
New journal issue suggestion	+	-	-
Dataset submission	+	+	+
Dataset peer review	+	+	-
Publishing		+	+
Assessment and evaluation	+	+	-
Focusing on the life sciences	+	+	+
Costs	-	-	-
Help/tutorials/documentation			
Online help	+	http://www.youtube.com/watch?v=Y6_Kz5L010g	http://www.openphacts.org/documents/Presentations/What_Is_OPS_v1.1.pdf
Video tutorials	-	http://www.youtube.com/watch?v=x83pzMMw7lk	-
Contextual help	+	-	-

Table 8: Pilot 1 positioning of competitive products (continued)

Pilot 2: Novel open, semantically-assisted peer review process (paper-based reviewers suggestion and selection, review support, review for submission, open-identity post review discussion)

Service / Service Provider	OpenScience Link	EasyChair	FluidReview	ArnetMiner
OpenScienceLink Pilot 2 functionalities				
Paper-based reviewers suggestion	+	-	-	+
Review support	+	-	-	+
Review form submission	+	+	+	+
Open-identity post-review discussion	+	-	+	-
Focusing on the life sciences	+	-	-	-
Costs	-	-	+	-
Help/tutorials/documentation				
Online help	+	http://www.easychair.org/faq.cgi	-	http://arnetminer.org/reviewer-home
Video tutorials	+	+	http://fluidreview.com/videos	-
Contextual help	+	-	-	-

Table 9: Pilot 2 positioning of competitive products

Pilot 3: Data Mining for Biomedical and Clinical Research Trends detection and analysis (trend mining)

Service / Service Provider	OpenScience Link	ArnetMiner	TechCast	Millennium Project
OpenScienceLink Pilot 3 functionalities				
Trend Mining	+	+	+	+
Focusing on the life sciences	+	-	-	-
Costs	-	-	+	+
Help/tutorials/documentation				
Online help	+	http://arnetminer.org/ranks/author	http://www.techcast.org/methodology.aspx	+
Video tutorials	+	+	-	+
Contextual help	+	-	-	+

Table 10: Pilot 3 positioning of competitive products

Pilot 4: Data Mining for proactive formulation of scientific collaborations (Dynamic and automated identification of researcher's relationships, Dynamic and automated identification of groups of relevant researchers)

Service / Service Provider	OpenScience Link	Research Gate	ArnetMiner	Method space	MyScience Work
OpenScienceLink Pilot 4 functionalities					
Dynamic and automated identification of researcher's relationships	+	+	+	-	-
Dynamic and automated identification of groups of relevant researchers (around specific areas or interests)	+	-	-	-	-
focusing on the life sciences	+	-	-	-	-
Costs	-	-	-	-	-
Help/tutorials/documentation					
Online help	+	+	http://arnetminer.org/ranks/author	+	+
Video tutorials	+	+	+	-	-
Contextual help	+	-	-	-	-

Table 11: Pilot 4 positioning of competitive products

Pilot 5: Scientific field-aware, Productivity- and Impact-oriented Enhanced Research Evaluation Services (Research work evaluation, Researcher evaluation, Research group or community evaluation, Journal evaluation, Institution evaluation, Country evaluation)

Service / Service Provider	OpenScience Link	Thomson Reuters Web of Science	Thomson Reuters InCites	Research Gate	ArnetMiner
OpenScienceLink Pilot 5 functionalities					
Research work evaluation	+	+	+	-	-
Researcher evaluation	+	+	+	+	+
Research group or community evaluation	+	+	+	-	-
Journal evaluation	+	+	-	-	-
Country evaluation	+	+	+	-	-
focusing on the lifescience	+	-	-	-	-
Costs	-	+	+	-	-
Help/tutorials/documentation					
Online help	+	http://thomsonreuters.com/scholarly-scientific-research/	+	+	+
Video tutorials	+	+	http://researchanalytics.thomsonreuters.com/incitesdemo/	-	+
Contextual help	+	-	-	-	+

Table 12: Pilot 5 positioning of competitive products

4 The OpenScienceLink Sustainability Strategy

4.1 The sustainability approach

Overall, the OpenScienceLink sustainability activities will ensure the sustainability of the project services and the rapid and wide adoption of the latter beyond the project's lifetime and the EC funding. The specification and, even more, the execution of the strategy is expected to be further boosted by the overall landscape in research and publications as well as the exploitation and dissemination activities and the roadmap to be built within the project. In fact, the latter activities need to be taken into serious consideration when developing the sustainability plans as several of their key aspects, such as the definition of the business targets, the market, the pricing scheme and, in general, the business plan and the market analysis, are quite relevant and affect, up to a certain extent, the customer base, the replicability perspectives and the overall sustainability potential. Hence, the plans are strongly connected with all the other WP9 tasks (namely, T9.1 Dissemination, Communication and Premarketing, T9.2 Establishment and Building Up of an External Users Groups and T9.3 Business and Marketing Plans) as well as WP8 with T8.5 Best Practices, Blueprints and Lessons Learnt and WP2 with T2.4 Specification of Key Performance Indicators (KPIs). Therefore, the progress within each of these tasks is expected to further trigger updates for the sustainability plans.

Based on their temporal projection, two approaches are considered for the OpenScienceLink sustainability strategy: (a) viability at a mid-term level and (b) sustainability at a long-term level. Furthermore, an interesting aspect to be investigated is the replicability of services in other scientific domains, such as computer science or psychology, which will enable the implementation and application of the services in a greater variety of domains and will in turn ensure a greater customer and user base.

The evaluation of the viability aspect of the OpenScienceLink results will be based on the TELOS [21] methodology. The latter specifies five key areas which constitute the acronym of the methodology and determine whether the project should continue its works or not. More specifically, these areas are presented in the following table:

Aspect	Question it aims at answering	Description
Technical	"Is the project technically feasible?"	In order to address this aspect, it is needed to show that the key technical aspects of the system, i.e., architecture, user interface, underlying mechanisms, technologies used and so on, allow for the provision of the targeted functionalities. The implementation of the latter can be made based on existing or soon to be available components. Hence, it aims at ensuring the realistic design and implementation of the platform.
Economic	"Can the project be afforded?" "Will it increase cost/benefit?"	This aspect focuses on the cost and the estimated value of the platform and the provided services. It aims at evaluating whether the platform is worth being developed. The assessment of this aspect allows for the determination of the economic benefits, through a cost/benefits analysis, to the entities that will develop and/or use the OpenScienceLink platform.

Aspect	Question it aims at answering	Description
Legal	"Is the project legally viable?"	This aspect focuses on investigating how and the level at which current legislation as well as internal policies of the companies and organisations involved will affect the project and the platform.
Organisational / **O**perational	"Will the users accept the change?" "How effective the project will be in solving the problem at hand?	This aspect focuses on assessing the effectiveness that the platform will offer to the organisations in addressing the issues that the project aims at, and in achieving the targeted benefits.
Scheduling	"Can the project be done in time?"	This aspect focuses on the temporal perspective of the project. More specifically, it analyses the schedule of the project delivery in terms of its viability. If it is evaluated as unrealistic, then it is updated with a more realistic time frame and required resources.

Table 13: The five key areas of the TELOS methodology

It should be noted that the KPIs (Key Performance Indicators) which are developed in WP2 and presented in the report D2.1 (Report on Stakeholders, Main Use Cases, KPIs and Data Sources Assessment) and the ones analysed in WP8 and presented in D8.1 (OpenScienceLink Evaluation Framework) are actually linked with these five (5) aspects.

In order to increase the sustainability potential of the OpenScienceLink platform and the services provided, the sustainability plans and the platform development works will encapsulate a series of traits which, at least partially, boost the replicability aspect. More specifically, the platform will be designed and implemented on the basis of *generability* on three axes; open (or subscription-based) access data sources, journals facilitated and domains covered. Hence, the OpenScienceLink approach will be *expandable* concerning the data sources it links with, will be applicable to a wide variety of journals and will be able to cover not only the biomedical domain, but also any other domain. The *modularity* of the platform components and services will further allow the platform *adaptability* and faster integration with other platforms or new/updated components and models. It will also allow for the easy *replacement* of mechanisms and components with new ones which will be incorporating new and/or improved functionalities. Moreover, its *independence* from the underlying data sources allows for its easy expansion and easy replacement when necessary (no longer available, of interest or of value). The co-existence of other (at least dispersed) systems performing supplemental and/or similar functionalities, such as managing journals, including the review process, evaluating published research outputs and allowing researchers to build collaboration networks, further strengthens the sustainability potential of the platform as the *integration* possibility will be investigated, exploiting this way existing user bases and synergies. The use of standardised interfaces will further boost this possibility.

4.2 Strategy for increased and engaged end users population

A key aspect of the sustainability strategy involves the actions to be made for attracting and engaging the end user population. The initial sustainability plan will include the following ones:

1. *Strong involvement of users within the Consortium*

   The project organisations will comprise the initial pool of users for the OpenScienceLink platform. Each one of these organisations has committed to disseminate the platform within their context and engage hundreds of users during the project's lifetime. The successful use of the platform by these users along with the internal dissemination activities to be held via demonstrations, presentation and information at the university's website and e-mail campaigns among others will further attract users. Partner organisations will check the possibility of adding a link to OpenScienceLink platform to their university, school, lab and library website. The expected and targeted participation of internal partner users in the platform services is presented in section5.3.

2. *Involvement of external users*

   The Consortium will exploit their business and scientific networks in order to disseminate the platform services and attract more users. Initially, project partners will attempt to attract users from their business and research networks. Gradually, the next plans will include broad dissemination activities held by the partners individually and the Consortium as a whole in order to increase platform awareness and attract more users.

   This step is highly dependent on the dissemination and exploitation activities of the project and its success is strongly affected by their positive outcome. More specifically, the exploitation activities will thoroughly present the targeted population within the current and near future market context. The dissemination activities will involve the preparation of a dissemination plan which will include the selection of the dissemination methods, the determination of the dissemination material to be prepared taking into consideration the targeted audiences, the selection of the events (conferences, workshops, etc.) to use for the dissemination purposes, etc.

   As the clinical and biomedical experts participating in the OpenScienceLink Consortium are highly reputed scientists in their field of expertise, each one of them will be acting as research community leader in their domain. Hence, they will be actively participating in the platform scenarios and will be engaged to be using the services. With the effect of an influencer in their fields, their high activity/involvement is expected to trigger researchers into using the platform. Moreover, the OpenScienceLink experts will be sending personalised emails to their research community members and collaborators throughout the project's lifetime, notifying them about the project's works and the services status.

   Given that the purpose of the dissemination activities will be not only to raise awareness but also promote the project's outputs and results to interested stakeholders and engage the community, particular focus should be given on the preparation of material visualising the pilot services and their expected benefits in simple steps, live demonstrations of the platform and, if possible, test usage of the platform by researchers of the domain for submitting their feedback. The latter could take place either through guided use of the platform in a training-like manner or by inviting researchers to join the platform and use it for a specific period of time (e.g., 2 weeks or 30 days).

   The OpenScienceLink External Users / Stakeholders Group (EUSG) (aka Special Interest Group) will also comprise an important sustainability vehicle. It is a group of external users who closely follow the project's works and are regularly updated about its developments. The different regular forms of communication will allow for the incorporation of the group participants' feedback and ideas into the project's activities and implementation outcome and, hence, increase their commitment to using the platform.

   In order to maximise the sustainability potential of the services and the outcome of the related activities, the SocIoS platform will be used for identifying the major influencers in a specific scientific area or field, so that the communication efforts are targeted and

effective. It should be noted that a major influencer is not necessarily a top scientist, and, for this reason, the SocIoS platform is used instead of the OpenScienceLink Pilot 5 services.

3. *Involvement of entities within the Consortium organisations*

   Given the variety and the type of the stakeholders participating in the OpenScienceLink eco-system, it is expected that different entities within the Consortium organisations could be approached for acting as users (e.g., universities could be acting as publishers through their university press) or for providing their data to be linked with the platform.

   Demonstrations of the platforms will be planned for these entities so that they become aware of the services and their potential as well as they can fully understand their role in the OpenScienceLink eco-system.

In order to capture users' feedback about the services, the users of the OpenScienceLink services will be receiving questionnaires on a regular basis. Moreover, for user engagement purposes, a reputation-based reward system will be applied. More specifically, the most active researchers, both in terms of service usage and recommendation of the system to new users, will be announced on a regular basis.

4.3 Strategy for business and technological competitiveness

In order to ensure that the developed platform is competitive both from a business and a technological perspective, the following aspects will be considered:

Funding for further platform development after the project's lifetime

In order to ensure the financial viability of the platform and its continuous enhancement for purpose of competitiveness, the OpenScienceLink partners will be investigating different potential funding sources, including regional, national or EU development programs, sponsorships by interested stakeholders (such as pharma or publishers), etc. These activities strongly depend on the exploitation decisions to be made, including whether the continuation of the works will be on a partner or a collaboration basis, it will involve a spin-off or a third party involvement, etc.

Business models for the sustainable operation of the OpenScienceLink platform

The Consortium will dedicate part of its activities on developing business models with a view towards the sustainability of the platform and the services provided. The business models will cover both the data journal developed and the platform along with the services offered. In all cases, the business models will take into consideration the Consortium partners' roles (technology providers, service integrators and providers, publisher, etc.).

5 From the Sustainability Strategies to Actions

5.1 Implementation Plan

This section presents the sustainability analysis of the data journal which comprises a pilot 1 product as well as a cross-pilot analysis for the sustainability plans for the services. As this document comprises the first out of three releases of the sustainability plans, it is expected that the platform releases, the project's progress and the output of the dissemination and exploitation activities will provide valuable input for updating and enhancing the sustainability plans.

5.1.1 Sustainability analysis of the data journal (pilot 1)

A. Spendings per year

	Activity	**Rough cost estimate**
A0	Policies, business process, legal issues	OSL
A1	Website and presence in social networks Initial development, software and functionality upgrades, expanding the presence in social networks	2,000
A2	Journal management 1/2 position, bachelor's degree, working knowledge of English, some understanding of biomedical issues (2,500 Euro per month, including social and other insurance, including the insurance paid by the employing company) = 12 months x 1,250 Euro per month (article processing, e.g. page setting, is included here)	15,000
A3	Printing 4 issues x 1,500 Euro (4 colours cover, the usual issue is with black and white body; when necessary, individual pages /galley/ way be printed in colour; printout – between 300 and 500 copies; format – A4)	6,000
A4	Advertising the journal (online, in specialised magazines, at relevant conferences, etc.)	2,000
	Sub-total	25,000
A5	Overhead, 20 % Office space & equipment, consumables, communications, web hosting, etc.	5,000
	Total	**30,000**
A6	Return of Investments, 20 %	6,000
A7	Required annual revenues	**36,000**

Table 14: Spendings for pilot 1

B. Possible revenues

	Sources	**Required revenues**
B1	Sale of printed copies including by subscription Euro 20 per sold copy (above packaging, posting, and transaction costs), 100 copies sold of each issue = 4 x 100 x 20	8,000
B2	Advertising in the journal	2,000
B3	Direct support by an agency or programme supporting open access	2,000
B4	Author's fees (institutional membership may provide stability and increase predictability, but is not expected to increase revenues, since it will lead to waiving authors' fees) 4 issues x 15 articles per issue in average = 60 articles **Fee of 400 Euro per article** (or an equivalent amount for an institutional membership) Remark: Fees for publications by members of the Editorial Board and 'active' reviewers may be waived. Hence, this calculation is based only on the number of articles for which authors are requested to pay the fee.	24,000
	Total	**36,000**

Table 15: Possible revenues for pilot 1

Possibilities to reduce costs:

Increase the efficiency of journal management and journal preparation

1. Assign a person with lower qualification to manage the journal (not desirable).
2. Seek synergies by assigning the same person to manage three or four journals.
3. Request that authors use a dedicated writing tool (that provides the articles in print-ready form).
4. Milder form of the above requirement – provide templates in commonly used software tools and request that authors use the one they are used to.
5. Request that articles be written in a language that does not require copy-editing.
6. Provide paid services for formatting submissions to journal requirements (in case a contribution is not formatted according to journal requirements)
7. Provide paid copy-editing services for cases when a contribution is not written with acceptable quality of language.

Selected examples of author's fees for publication in open access journals:

Journal	At launch	Regular	Remark
Biodiversity Data Journal, Pensoft	0	"a minimal fee ... that anyone can afford"	Manuscripts must be written in their own 'writing tool,' or from integrated external platforms, such as Scratchpads or GBIF Integrated Publishing Toolkit
Geoscience Data Journal, Wiley	n/a	$1,500	
GigaScience (~BioMed Central)	0	0	Thanks to the support by BGI
Journal of Open Public Health Data, Ubiquity Press	0	0	"covered by funding"
Genomics Data, Elsevier	$ 100	$ 500	Additional charges if formatting and copy editing is necessary
Scientific Data, Nature Publishing Group	-30%	$ 630/700	Depending on the type of Creative Commons License
Journal of Defense Management, OMICS Group	$ 1,300	$ 1,300	Do not seem to have considerable number of contributors. Members of the Editorial Board publish free of charge

Table 16: Examples of author fees for publication in OA journals

Increase revenue predictability and direct support

- Seek support by funding agencies
- Seek support by academic libraries, foundations, corporations, etc.

5.1.2 Sustainability analysis of the services

In order to realize the strategies described in the previous chapter, a series of actions which could be followed during the project's lifetime have been identified. Given the project's duration and the variety of roles among the Consortium partners (e.g., technology and service providers, researchers, legal and IPR experts, publishers, etc.), these actions are planned within the 3 years of the project and for each one of them the partners who are expected to realize them are identified. In this initial sustainability analysis, the implementation plan for year 1 and 2 has been specified. The sustainability plans to follow will comprise updates of the current one for year 2 and year 3, whereas the strategy for the after project period will also be determined. Their analysis is expected to be much more thorough given that they will also take into consideration important information from the dissemination and exploitation activities.

Action	Series of Steps	Who	Related WP/Task	Consortium skills are enough (Yes/No)	Metrics Demonstrating Progress	When	Prerequisite	(M)andatory / (O)ptional
Involvement of users within the Consortium organisations	Selection of classes and laboratories to be initially targeted for students and researchers who could use the platform.	TUD, LUHS, CNR, NKUA	T6.1	Yes	Number of classes and laboratories Number of students and researchers	Year 1 Year 2 Year 3	None	M
	Announcement of platform services progress at the university website and through the university mailing lists.	TUD, LUHS, CNR, NKUA	T9.1	Yes	Yes/No	Year 2 Year 3	Project News releases (T9.1)	M
	Inclusion of the platform link at university, lab and library website.	TUD, LUHS, CNR, NKUA	T9.1	Yes	Yes/No	Year 2 Year 3	Initial Platform release (WP5)	M
	Demonstration of the platform to students and researchers.	TUD, LUHS, CNR, NKUA	T6.3/T9.1	Yes	Number of students and researchers to whom the platform was demonstrated	Year 2 Year 3	Initial Platform release (WP5) Preparation of Demonstration Videos (T9.1)	M
	Collection of feedback.	TUD, LUHS, CNR, NKUA	T8.2	Yes	Number of users providing feedback Number of different comments collected	Year 2 Year 3	Platform demonstration (T9.1) Questionnaire for feedback collection (WP8)	M

Action	Series of Steps	Who	Related WP/Task	Consortium skills are enough (Yes/No)	Metrics Demonstrating Progress	When	Prerequisite	(M)andatory / (O)ptional
	Regular communication with internal users for announcing project progress and platform releases.	TUD, LUHS, CNR, NKUA	T9.1	Yes	Number of users contacted with	Year 2 Year 3	Project News releases (T9.1) Platform releases (WP5)	M
	Personalised news announcements based on the feedback submitted.	TUD, LUHS, CNR, NKUA	T6.1/T9.1	Yes	Number of personalised news items	Year 2 Year 3	Feedback collected (WP7)	O
	Monitoring of each user's activity in the platform (how often, for how long, which services).	TUD, NTUA, TI	WP7	Yes	Yes/No	Year 2 Year 3	Platform release (WP5) Use of platform by users (WP7)	O
	Communication with the users based on their activity in the platform (reminders when inactive for more than a period (e.g., 1 month), announcements for new features to be included in the services they use most often, etc.).	TUD, LUHS, CNR, NKUA	T6.1	Yes	Yes/No	Year 2 Year 3	Platform release (WP5) Use of platform by users (WP7) Monitoring of platform activity (WP7)	O

Action	Series of Steps	Who	Related WP/Task	Consortium skills are enough (Yes/No)	Metrics Demonstrating Progress	When	Prerequisite	(M)andatory / (O)ptional
Involvement of external users	Determination of specific scientific fields to initially target at.	TUD, LUHS, CNR, NKUA	T6.4/T9.1	Yes	Number of different fields identified	Year 1 Year 2 Year 3	None	M
	Preparation of a list of researchers, research communities and groups they will contact with based on the above fields.	ALL	T6.4	Yes	Number of identified researchers Number of identified research communities Number of identified research groups	Year 1 Year 2 Year 3	Determination of specific scientific fields to initially target at	M
	Preparation of a list of stakeholders for each role in the OpenScienceLink eco-system who could serve as potential users.	ALL	T6.4	Yes	Number of identified researchers Number of identified research communities Number of identified research groups	Year 1 Year 2 Year 3	Work in T9.3	M
	Use of the SocIoS platform for identifying the major influencers in each one of the specific scientific fields.	ALL	T9.1	Yes	Number of major influencers per field	Year 2 Year 3	None	M
	Decision for the communication channels to be used for contacting the external users.	ALL	T9.1	Yes	Yes/No	Year 1 Year 2 Year 3	None	M

Action	Series of Steps	Who	Related WP/Task	Consortium skills are enough (Yes/No)	Metrics Demonstrating Progress	When	Prerequisite	(M)andatory / (O)ptional
	Preparation of a template e-mail for the communication with the potential users.	ALL	T9.1	Yes	Yes/No (investigate need for a template per pilot and/or per scientific field)	Year 1 Year 2 Year 3	None	O
	Each partner contacts the potential users they have identified as well as the influencers in their specific scientific field.	ALL	T6.1/T9.1	Yes	Number of researchers approached Number of research communities approached Number of research groups approached	Year 2 Year 3	Preparation of list of potential contacts (previous step) (T9.1)	M
	Personalised communication with the potential users.	ALL	T6.1/T9.1	Yes	Number of researchers approached Number of research communities approached Number of research groups approached	Year 2 Year 3	Preparation of list of potential contacts (T9.1)	O
	Presentation of the platform services to the external users.	ALL	T6.3/T9.1	Yes	Number of platform presentations to external users Number of external users participating in the presentations	Year 2 Year 3	Initial Platform release Preparation of Demonstration Videos	M

Action	Series of Steps	Who	Related WP/Task	Consortium skills are enough (Yes/No)	Metrics Demonstrating Progress	When	Prerequisite	(M)andatory / (O)ptional
	Collection of feedback.	ALL	WP8	Yes	Number of users providing feedback Number of different comments collected	Year 2 Year 3	Platform demonstration Questionnaire for feedback collection	M
	Regular communication with users for announcing project progress and platform releases.	ALL	T9.1	Yes	Number of users contacted with	Year 2 Year 3	Project News releases Platform releases	M
	Personalised news announcements based on the feedback submitted.	ALL	T9.1	Yes	Number of personalised news	Year 2 Year 3	Feedback collected	O
	Monitoring of each user's activity in the platform (how often, for how long, which services).	TUD, NTUA, TI	WP7	Yes	Yes/No	Year 2 Year 3	Platform release Use of platform by users	O

Action	Series of Steps	Who	Related WP/Task	Consortium skills are enough (Yes/No)	Metrics Demonstrating Progress	When	Prerequisite	(M)andatory / (O)ptional
	Communication with the users based on their activity in the platform (reminders when inactive for more than a period (e.g., 1 month), announcements for new features to be included in the services they use most often, etc.).	ALL	T6.1	Yes	Yes/No	Year 2 Year 3	Platform release Use of platform by users Monitoring of platform activity	O
Release of exploitation plan and business analysis	Market analysis.	ALL	T9.3	Yes	Yes/No	Year 2 Year 3	Work within T9.3 Business and Marketing Plans	M
	SWOT analysis.	ALL	T9.3	Yes	Yes/No	Year 2 Year 3		M
	Targeted customers, stakeholders and market segments.	ALL	T9.3	Yes	Yes/No	Year 2 Year 3		M
Dissemination plan preparation	Selection of targeted audiences.	ALL	T9.1	Yes	Yes/No	Year 2 Year 3	Work within T9.1 Dissemination, Communication and Premarketing	M
	Selection of events (conferences, workshops, etc.) to participate at.	ALL	T9.1	Yes	Number of conferences Number of workshops Number of demonstrations and exhibitions Number of open access related events	Year 1 Year 2 Year 3		M

Action	Series of Steps	Who	Related WP/Task	Consortium skills are enough (Yes/No)	Metrics Demonstrating Progress	When	Prerequisite	(M)andatory / (O)ptional
	Selection of Blogs and Websites to present the services.	ALL	T9.1	Yes	Number of blogs Number of websites	Year 1 Year 2 Year 3		M
	Identification of other relevant projects and initiatives for networking.	ALL	T9.1	Yes	Number of projects and initiatives	Year 1 Year 2 Year 3		M
Preparation of dissemination material	Preparation of project leaflets and brochures.	ALL	T9.1	Yes	Yes/No	Year 1 Year 2 Year 3	Work within T9.1 Dissemination, Communication and Premarketing	M
	Preparation of project posters.	ALL	T9.1	Yes	Yes/No	Year 1 Year 2 Year 3		M
	Preparation of project videos demonstrating the platform.	ALL	T9.1	Yes	Yes/No	Year 1 Year 2 Year 3		M
	Preparation of project news releases.	ALL	T9.1	Yes	Number of project news releases prepared	Year 1 Year 2 Year 3		M
Distribution of dissemination material to interested audiences	Distribution of project leaflets and brochures.	ALL	T9.1	Yes	Number of project leaflets and brochures distributed	Year 2 Year 3	Work within T9.1 Dissemination, Communication and Premarketing	M
	Distribution of project posters.	ALL	T9.1	Yes	Number of project posters prepared Audience size	Year 2 Year 3		M

Action	Series of Steps	Who	Related WP/Task	Consortium skills are enough (Yes/No)	Metrics Demonstrating Progress	When	Prerequisite	(M)andatory / (O)ptional
	Distribution of project videos demonstrating the platform.	ALL	T9.1	Yes	Number of project videos demonstrating the platform Audience size	Year 2 Year 3		M
	Distribution of project news releases.	ALL	T9.1	Yes	Number of project news releases sent out (audience size)	Year 2 Year 3		M
External Users / Stakeholders Group (EUSG) (aka Special Interest Group) involvement	Determination of the full OpenScienceLink eco-system.	ALL	T9.3	Yes	Yes/No	Year 1 Year 2 Year 3	Work in T9.3	
	Preparation of a list of stakeholders for each role in the OpenScienceLink eco-system who could join the EUSG (it is expected to be a sub-list of the external users list, including the ones resulting from the SocIoS platform analysis).	ALL	T9.3	Yes	Number of potential EUSG members	Year 1 Year 2 Year 3	Work in T9.1, T9.2	
	Each partner contacts the potential members of the EUSG based on their specific scientific field and/or their expertise (researcher, publisher, etc.).	ALL	T9.3	Yes	Number of potential EUSG members approached	Year 2 Year 3	Work in T9.2	

Action	Series of Steps	Who	Related WP/Task	Consortium skills are enough (Yes/No)	Metrics Demonstrating Progress	When	Prerequisite	(M)andatory / (O)ptional
	Signing a Memorandum of Understanding (MoU) with each interested party.	ALL	T9.2	Yes	Yes/No	Year 2 Year 3	Work in T9.2	O
	Communication at least once with the EUSG during requirements analysis and use cases specification for feedback collection (incorporation of their comments into the new platform release and close monitoring of the project's activities will increase engagement).	ALL	T9.2	Yes	Yes/No	Year 2 Year 3	Work in T9.2	M
	Presentation of the platform services to the members after each major platform release (focusing on the new features).	ALL	T6.3/T9.1	Yes	Number of EUSG users participating in the presentations	Year 2 Year 3	Initial Platform release Preparation of Demonstration Videos	M
	Collection of feedback.	ALL	WP8	Yes	Number of EUSG users providing feedback Number of different comments collected	Year 2 Year 3	Platform demonstration	M

Action	Series of Steps	Who	Related WP/Task	Consortium skills are enough (Yes/No)	Metrics Demonstrating Progress	When	Prerequisite	(M)andatory / (O)ptional
	Regular communication with EUSG users for announcing project progress and platform releases.	ALL	T9.1	Yes	Number of users contacted with	Year 2 Year 3	Project News releases Platform releases	M
	Investigation of the potential for using the EUSG members' network of collaboration for further enriching the EUSG and/or increasing the external users.	ALL	T9.1	Yes	Number of users contacted with	Year 2 Year 3	None	M
Feedback Collection	Preparation of questionnaires for feedback collection.	ALL	WP8	Yes	Yes/No (1 questionnaire per pilot is expected)	Year 2 Year 3	None	M
	Distribution of questionnaires to platform users.	ALL	WP7	Yes	Number of questionnaires distributed per pilot Number of responses collected per pilot	Year 2 Year 3	Preparation of questionnaires Platform releases Demonstration of platform services	M

Action	Series of Steps	Who	Related WP/Task	Consortium skills are enough (Yes/No)	Metrics Demonstrating Progress	When	Prerequisite	(M)andatory / (O)ptional
	Analysis of the feedback and respective platform enhancements.	ALL	WP2 WP3 WP4 T5.4	Yes	Percentage of collected comments which were transformed into platform modifications (including additions)	Year 2 Year 3	Platform use Questionnaire distribution	M
Demonstration of platform to entities within the consortium organisations	Identification of organisation entities which could be approached (e.g., university press, library, etc.).	Initially: TUD, NKUA, CNR, LUHS Gradually: ALL	T6.1	Yes	Number of different entities identified Number of different roles covered in the OpenScienceLink ecosystem	Year 2 Year 3	None	M
	Communication with the identified entities.	Initially: TUD, NKUA, CNR, LUHS Gradually: ALL	T6.1	Yes	Number of different entities the Consortium contacted with Number of different roles covered in the OpenScienceLink ecosystem by these entities	Year 2 Year 3	Identification of the internal organisational entities	M
	Presentation and/or Demonstration of the platform services.	Initially: TUD, NKUA, CNR, LUHS Gradually: ALL	T6.1, 9.1	Yes	Number of entities to which the platform was presented and/or demonstrated	Year 2 Year 3	Prior communication with the entities Platform release (WP5)	M

Action	Series of Steps	Who	Related WP/Task	Consortium skills are enough (Yes/No)	Metrics Demonstrating Progress	When	Prerequisite	(M)andatory / (O)ptional
	Determination of the specific role the entities could be serving.	Initially: TUD, NKUA, CNR, LUHS Gradually: ALL	T6.1	Yes	Yes/No	Year 2 Year 3	Determination of the OpenScienceLink ecosystem (T9.3)	
Rewarding participation	Monitoring of users activities in the platform.	TUD, NTUA, TI	WP7	Yes	Yes/No	Year 2 Year 3	Platform use (WP7)	M
	Announcing the top 20 active scientists of the month by presenting their short CV (reward through publicity).	ALL	WP7	Yes	Yes/No	Year 2 Year 3	Platform use (WP7)	M
	Investigation of other motives for ensuring and/or boosting user attraction and engagement.	ALL	WP7	Yes	Yes/No	Year 2 Year 3	Platform use (WP7)	M
Ensuring Financial Viability after the project's lifetime	Investigation of different funding sources, including grants, sponsorships, internal funding.	ALL	WP9	Yes	Number of funding sources Potential funding size	Year 2 Year 3	Market analysis Exploitation planning	M
	Continuous investigation for funding opportunities.	ALL	WP9	Yes	Yes/No	Year 2 Year 3	Market analysis Exploitation planning	M

Action	Series of Steps	Who	Related WP/Task	Consortium skills are enough (Yes/No)	Metrics Demonstrating Progress	When	Prerequisite	(M)andatory / (O)ptional
	Determination of the exploitation vehicle (e.g., individual exploitation, third party, spin-off company, etc.).	ALL	WP9	Yes	Yes/No	Year 2 Year 3	Market analysis Exploitation planning	M

Table 17: Implementation Plan of Initial Sustainability Activities

5.2 Revising the Sustainability Plan

The Consortium will officially revise the sustainability plan twice within the project's lifetime (M15 and M27). However, given its strong dependence with the exploitation and dissemination activities of the project as well as the platform's evaluation and validation works, sustainability activities will take place across the project's lifetime. Hence, the sustainability plans document is considered to be a *live document* throughout the project. NTUA is responsible for its editing and finalisation. Nevertheless, in order to ensure that the sustainability plans are not at risk of becoming obsolete and stopping being used, each partner should and will contribute to the sustainability plans according to their expertise and role.

5.3 Resource Requirements

This section summarises the resources that are needed in order to carry out the sustainability plan strategies.

TUD (BIOTEC) Sustainability Figures	**2016**	**2017**	**2018**	**2019**	**2020**
Total Number of (Internal) Registered Users (Researchers)/ Total Active Ones	125/100	180/150	225/190	275/240	310/280
Promotion costs	10000€	10000€	5000€	5000€	5000€
Additional Development Costs	15000€	15000€	15000€	5000€	5000€
Growth in volume of generated content	5%	8%	10%	10%	10%

Table 18: Estimated Sustainability Figures for TUD (Biotechnology Center), for the period after the end of the project.

TUD (Uniklinikum and BCube) Sustainability Figures	**2016**	**2017**	**2018**	**2019**	**2020**
Total Number of (Internal) Registered Users (Researchers)/ Total Active Ones	250/160	300/210	330/260	370/300	410/340
Promotion costs	5000€	5000€	3000€	3000€	3000€

TUD (Uniklinikum and BCube) Sustainability Figures	2016	2017	2018	2019	2020
Additional Development Costs	8000€	8000€	8000€	4000€	4000€
Growth in volume of generated content	5%	7%	7%	8%	10%

Table 19: Estimated Sustainability Figures for TUD (Uniklinikum and BCube), for the period after the end of the project.

LUHS Sustainability Figures	2016	2017	2018	2019	2020
Total Number of (Internal) Registered Users (Researchers)/ Total Active Ones	230/160	280/210	300/250	330/290	370/320
Promotion costs	7000€	7000€	3000€	2000€	2000€
Additional Development Costs	2000€	2000€	2000€	1000€	1000€
Growth in volume of generated content	5%	7%	7%	8%	10%

Table 20: Estimated Sustainability Figures for LUHS, for the period after the end of the project.

NKUA Sustainability Figures	2016	2017	2018	2019	2020
Total Number of (Internal) Registered Users (Researchers)/ Total Active Ones	350/230	380/300	400/340	420/370	440/400
Promotion costs	6000€	6000€	2000€	1000€	1000€

NKUA Sustainability Figures	2016	2017	2018	2019	2020
Additional Development Costs	2000€	2000€	2000€	1000€	1000€
Growth in volume of generated content	5%	10%	15%	20%	20%

Table 21: Estimated Sustainability Figures for NKUA, for the period after the end of the project.

CNR Sustainability Figures	2016	2017	2018	2019	2020
Total Number of (Internal) Registered Users (Researchers)/ Total Active Ones	240/200	270/230	300/260	320/280	340/300
Promotion costs	6000€	6000€	3000€	2000€	2000€
Additional Development Costs	2000€	2000€	2000€	1000€	1000€
Growth in volume of generated content	5%	10%	15%	20%	20%

Table 22: Estimated Sustainability Figures for CNR, for the period after the end of the project.

TI Sustainability Figures	2016	2017	2018	2019	2020
Total Number of (External) Registered Users (Researchers)/ Total Active Ones	120/100	170/130	200/160	250/220	300/250
Promotion costs	5,000 €	4,000 €	2,000 €	2,000 €	2,000 €
Additional Development Costs	3,000 €	3,000 €	1,000 €	1,000 €	1,000 €

TI Sustainability Figures	2016	2017	2018	2019	2020
Growth in volume of generated content	5%	6%	6%	8%	8%

Table 23: Estimated Sustainability Figures for TI, for the period after the end of the project.

6 Conclusion

This report serves as the initial sustainability plans for the OpenScienceLink platform. It presented the overall market into which the platform and its services are positioned, the competitors and how their products relate to the ones developed within this project and a comparison of the OpenScienceLink pilot services with these competitive products. The initial strategy to be followed for achieving the sustainability objectives has been presented as well as a thorough implementation plan focusing on the first two years of the project, but also including a set of actions to be undertaken during the last year of its operations. Two official revisions of the plans have been scheduled on M15 and M27 which will include updates of the implementation plan and introduction of new actions based on the exploitation and dissemination activities of the project.

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