



Deliverable D2.3 – Exploitation and Sustainability Plan

OPENING UP new methods, indicators and tools for peer review, impact measurement and dissemination of research results

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Abbreviations

ESP	Exploitation and Sustainability Plan
FOSTER	Facilitate Open Science Training for European Research
IT	Information Technology
OA	Open Access
RDA	Research Data Alliance
RRI	Responsible Research Innovation
SMEs	Small and Medium-sized Enterprises

1. Project Background

The OpenUP project addresses key aspects and challenges of the current science landscape, which is in a process of rapid transformation.. The goal of the project is to develop a cohesive framework for the review – disseminate - assess phases of the research life cycle .

To achieve this goal, the project will::

- Identify and determine ground - breaking mechanisms, processes and tools for peer - review for all types of research results (publications, data, software) (Open Peer Review)
- Explore, identify and classify innovative dissemination mechanisms with an outreach aim towards businesses and industry, education, and society as a whole (Open Dissemination)
- Analyze a set of novel indicators that assess the impact of research results and correlate them of channels of dissemination (Open Metrics)

The consortium will follow a user-centred, evidence-based approach, engaging all stakeholders (researchers, publishers, funders, institutions, industry, public) in an open dialogue, n the form of workshops, conferences and training activities. Interim results will be validated via a set of seven pilot projects involving communities from four research disciplines: life sciences, social sciences, arts & humanities, energy, as well as through surveys, interviews, case studies, workshops and focus groups. The final result will be a set of validated policy recommendations and guidelines for national and European stakeholders, including EU institutions.

2. Scope of this document

This document is the first result of process designed to last for the whole duration of the project. The planned outcome will be a detailed plan to exploit and sustain OpenUP's achievements after the end of the project.

Section two of this document presents a SWOT (Strengths, Weaknesses, Opportunities and Threats) analysis of Open Science and four of its key components: Open Access, Open Peer Review, Open Dissemination and Open Metric. The analysis identifies areas of strengths and opportunities, as well as areas where further development and attention is required.

The third section describes a plan to further develop this initial analysis identifying key exploitable areas and target stakeholders, as well as targets, indicators and milestones and guidelines for future exploitation.

3. Analysis of Strengths, Weaknesses, Opportunities and Threats

3.1 Definitions

For the purposes of the analysis that follows we define the following key terms.

- **Open Science** means free of charge access to the full set of information researchers require to maximize their scientific productivity.
- **Open Access** means free of charge access to results, papers, source, data and tools.
- **Open Peer Review** means transparent access to information concerning the process leading to publication decisions.
- **Open Dissemination** covers a broad range of activities including the following
 - Active pushing of papers, data, and tools to those most likely to benefit.
 - Standards to facilitate the text and data mining, provenance checking and data citation
 - Open commenting, open interlinking
 - Human support for searching (e.g. librarian services).
 - Operation of repositories and journal aggregators
 - 2nd level review
 - Social networks for researchers
- **Open Metrics** means free access to raw data and higher level metrics allowing researchers to identify the publications, data, and tools most likely to be useful for their research and allowing them to develop their own metrics.

3.2 SWOT Analysis

In this section, we present a SWOT analysis of Open Science and the four key drivers identified earlier: Open Access Publishing, Open Peer Review, Open Metrics and Open Dissemination.

The OpenUP Exploitation and Sustainability Plan will leverage on the selected opportunities and focus on addressable weaknesses.

Table 1: General features of Open Science

Strengths	Weaknesses
<ul style="list-style-type: none"> • Maximises re-use of scientific knowledge • Speeds up science • Reduces inequality 	<ul style="list-style-type: none"> • Real or perceived lack of quality assurance and quality • Poor reward for open practices • Generation gap between old and new communications paradigms • Prestige gap – “social networks are for losers” • Rejection of consumer technology by some scientists • Unwillingness of some scientists to share data/tools/ideas which are “not ready for prime time”
Opportunities	Threats
<ul style="list-style-type: none"> • The replicability movement • Strong support for openness from governments/funding agencies/individual scientists 	<ul style="list-style-type: none"> • Opposition from traditional publishers and industry • Opposition from industry scientists • Misuse/abuse of openness (i.e. pseudo science, predatory publishers) • Misuse of results

Table 2: Open Access Publishing

Strengths	Weaknesses
<ul style="list-style-type: none"> • Rapidly growing • Exploits technology • Already dominant in some disciplines • Open Access articles are more widely cited than articles in subscription journals 	<ul style="list-style-type: none"> • Real or perceived lack of quality • Less prestige for people who publish in OA • Does not adequately reward open practices • No financial incentives to access old but relevant data/articles • Some authors cannot afford Article Processing Fees. In some hybrid journals, it may be difficult to obtain waivers.
Opportunities	Threats
<ul style="list-style-type: none"> • Support from government • Support from developing countries and NGOs • Support from funding agencies • Replicability movement • Support from individual scientists • Movement for Open Access Publishing Cooperatives 	<ul style="list-style-type: none"> • Publisher opposition • Scientist opposition • Industry opposition

Table 3: Open Peer Review

Strengths	Weaknesses
<ul style="list-style-type: none"> • Makes peer review transparent • Reduced opportunities for bias • Reduced opportunities for superficial review • Review information valuable for researchers • Improves the quality of papers • Rewards reviewers 	<ul style="list-style-type: none"> • Removal of anonymity can be a problem • No strong movement in its favour
Opportunities	Threats
<ul style="list-style-type: none"> • Failures of classical peer review • Scientist frustration with rejection cascade 	<ul style="list-style-type: none"> • Opposition from scientists. Reviewers sometimes like to be anonymous. • Conservatism

Table 4: Open Dissemination

Strengths	Weaknesses
<ul style="list-style-type: none"> • Uses technology • Uses big data • “Wisdom of the crowd” • Can reach audience outside traditional communities • Standards make it easier to exchange information (e.g. URLs) • Gives faster access 	<ul style="list-style-type: none"> • Lack of critical mass. No science equivalent of Facebook. • Lack of perceived need. It is seen as a trend. Some scientists see networking as a “waste of time”. • May weaken traditional forms of collaboration (Facebook is not a substitute for a conversation) • Lack of pressure for Open Dissemination • Risk of “noise” • Perceived identification with traditional social technologies
Opportunities	Threats
<ul style="list-style-type: none"> • Continuous development in technology 	<ul style="list-style-type: none"> • “Out of sight. Out of mind” It is not on the radar of most scientists.

Table 5: Open Metrics

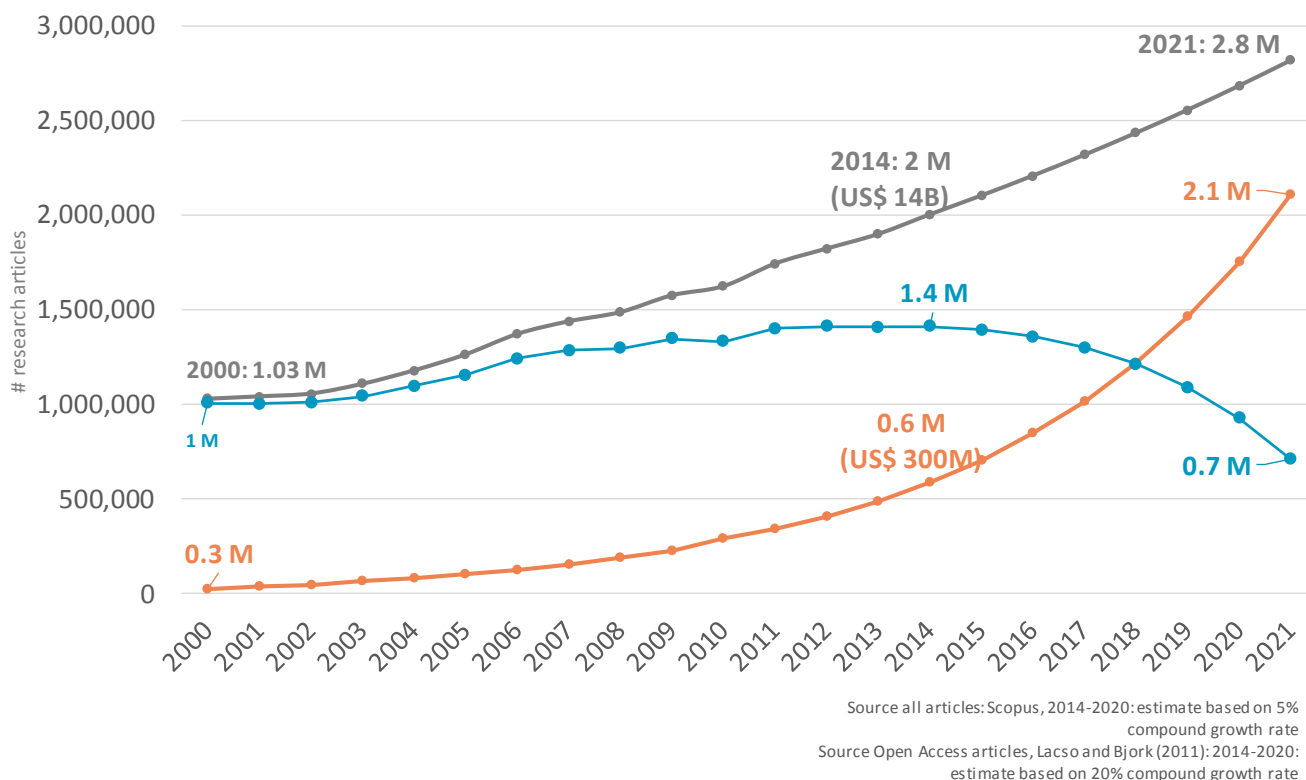
Strengths	Weaknesses
<ul style="list-style-type: none"> • Allows researchers to find research they need most 	<ul style="list-style-type: none"> • No general agreement on what Open Metrics means • Current alt-metrics are too general and superficial. Limit access to the raw data used to calculate traditional and alt-metrics.
Opportunities	Threats
<ul style="list-style-type: none"> • Citations and impact factors widely seen as inadequate 	<ul style="list-style-type: none"> • Industry opposition • Scientist opposition

3.3 Open Science – positioning OpenUP

The movement towards Open Science has built up momentum to maximize re-use of scientific knowledge, speed up development and reduce inequality, receiving wide support from government, funding agencies and scientists. But different aspects of Open Science have grown at different speeds.

The graph below estimates Open Access publishing to be growing at a rate of 20% per annum. This indicates that Open Access publishing is developing by itself and may require very little intervention for continued development.

Figure 1: The rise of Open Access Publishing



While the drivers behind Open Access publishing are powerful enough to guarantee its future growth, there is no such movement for Open Peer Review, Open Dissemination and Open Metrics.

In *Open Peer Review*, there is an ongoing debate about how to avoid bias and how to handle the trade-off between reviewer anonymity and the transparency of the review process. In *Open Dissemination*, technology has created new opportunities for the use of social media, big data and new media. Nonetheless critical mass is still missing and will not be achieved without continued promotion. In *Open Metrics*, there is little sign that commercial owners of valuable data on citations/views/downloads etc. are willing to release the data to the community.

The barriers and oppositions facing Open Peer Review, Open Dissemination and Open Metrics can only be overcome with support from Open Science proponents, including this consortium, and intervention at the policy level.

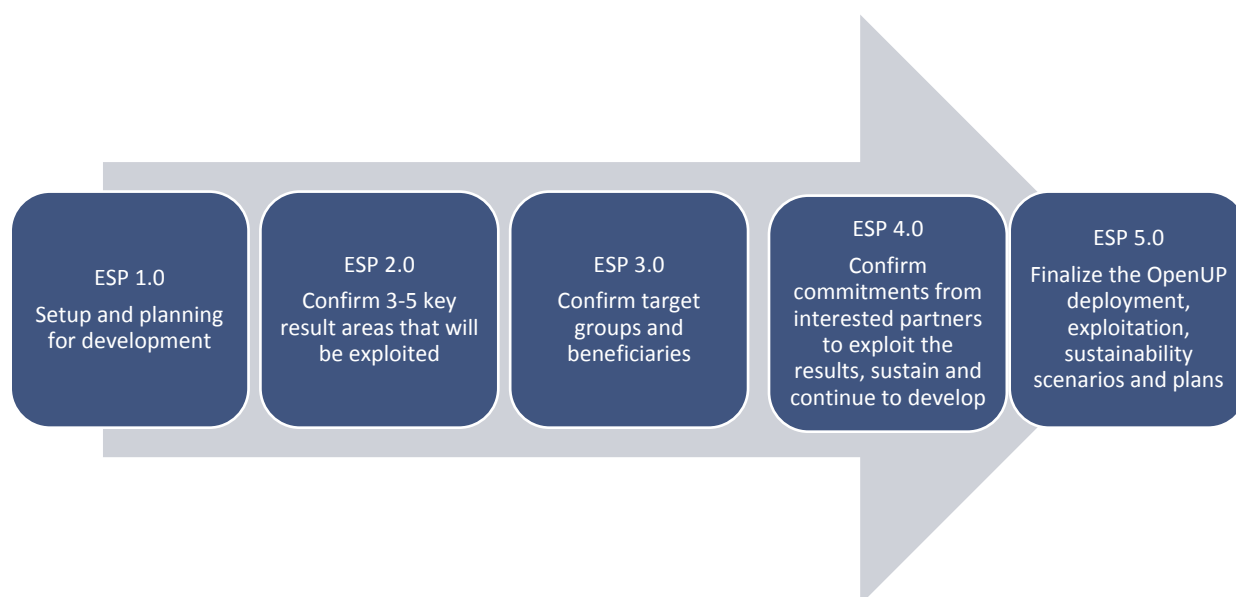
OpenUP recognizes the opportunity, as well as the limitations and challenges. Hence, the project is planning its exploitation and sustainability activities early enough to identify the key result areas and organize effectively.

4. Exploitation and Sustainability in OpenUP

4.1 Actions to develop the Exploitation and Sustainability Plan

Here, we present a plan to identify key exploitable areas and target stakeholders, and to define targets, indicators and milestones for the final **OpenUP Exploitation and Sustainability Plan**, due for release in September 2018. The development of the plan will take place in five steps.

Figure 2: ESP - OpenUP Exploitation and Sustainability Plan development steps



The main steps in the plan are broken down into the individual actions listed in *Table 6*.

Table 6: List of ESP – Exploitation and Sustainability Plan Activities

Ref #	Exploitation & Sustainability Activity	Lead	Year	Start	Year	End
ESP1.0	Setup and planning for development	Frontiers	2016	July	2016	October
ESP1.1	Develop the plan to come up with an Exploitation and Sustainability Plan	Frontiers	2016	July	2016	October
ESP1.2	Release D2.3 Exploitation and Sustainability Plan	Frontiers	2016	October	2016	October
ESP1.3	Discuss Exploitation and Sustainability Plan at the next consortium meeting including a sample Exploitation Plan on a key result area.	Frontiers	2017	February	2017	February
ESP1.4	Monitor ongoing collaboration on sustainability platforms and developments on key exploitation result	Frontiers	2016	October	2017	June
ESP1.5	Organize a seminar to train partners in identifying and exploiting results. Note: Assumes approval of the Exploitation Strategy Seminar hosted by the Common	Frontier/PPMI	2017	June	2017	June

Ref #	Exploitation & Sustainability Activity	Lead	Year	Start	Year	End
	Exploitation Booster team					
ESP2.0	Confirm 3-5 key result areas that will be exploited	Frontiers	2017	March	2018	July
ESP2.1	Identify potential key result areas in the Peer Review Framework, the approach to exploit and requirements to sustain and further develop results	UGOE	2017	May	2018	July
ESP2.2	Identify potential key result areas in the Innovative Dissemination Framework, the approach to exploit and requirements to sustain and further develop results	KNOW	2017	June	2018	June
ESP2.3	Identify potential key result areas in the Impact Indicators Framework, the approach to exploit and requirements to sustain and further develop results	IFQ	2017	March	2018	January
ESP2.4	Prioritize and agree on top 3 to 5 key result areas to exploit and steps to sustain development.	Frontiers	2018	May	2018	July
ESP3.0	Confirm target groups and beneficiaries	Frontiers	2018	May	2018	July
ESP4.0	Confirm commitments from interested partners to exploit the results, sustain and continue to develop	Frontiers	2018	May	2018	July
ESP5.0	Finalize the OpenUP deployment, exploitation, sustainability scenarios and plans	Frontiers	2018	July	2018	August
ESP5.1	Set the targets, indicators and milestones for ensuring the project's results live after the completion of the project.	Frontiers	2018	July	2018	August
ESP5.2	Specify the guidelines for exploitation and transfer of project results outside the original project network and duration.	Frontiers	2018	July	2018	August
ESP5.3	Release D2.4 Updated Exploitation and Sustainability Plan	Frontiers	2018	August	2018	September

This document is part of the set up activities in ESP1.0.

4.2.1 Confirm 3-5 exploitable key result areas

OpenUP has three main work stream for exploitation: the *Peer Review Framework*, *Innovative Dissemination framework*, and the *Impact Indicator Framework*

In the ***Peer Review Framework***, OpenUP will:

- Identify and determine mechanisms, processes and tools for open peer-review for all types of research outcomes.
- Investigate and understand how these are adapted and applied in an Open Science, e-Infrastructure enabled environment.
- Facilitate the identification of commonalities and opportunities for further investigation.

In the ***Innovative Dissemination Framework***, OpenUP will:

- Explore, identify and classify innovative dissemination mechanisms that go beyond participation in traditional academic events to address with businesses, the education sector and society as a whole, characterizing, their effectiveness and impact.
- Bring together relevant stakeholders to analyze different dissemination methods as they are used in different contexts (scientific or otherwise).
- Describe good practices and validate them in different settings with selected communities.
- Produce a set of recommendations on how to create a successful research dissemination strategy beyond traditional academic dissemination

In the ***Impact Indicators Framework***, OpenUP will:

- Identify and collect indicators and data, making it possible to evaluate the impact of research results in an open, social network savvy environment,
- Contextualize these indicators in terms of channels of dissemination
- Investigate how different indicators are perceived, adapted and used by different research communities and stakeholders.
- Guide the debate towards a framework of metrics and impact indicators suitable for use in different disciplines, and geographical regions and with different stakeholders

All results, best practices, tools, reports on the peer review will be shared through the OpenUp Information Hub. However, OpenUP exploitation plans will focus on three to five key result areas for further exploitation, which will be identified by Month 26, July 2018. These will be reflected in the Updated Exploitation and Sustainability Plan due September 2018.

4.2.2 Confirm target groups and beneficiaries

The OpenUP Dissemination Plan identifies five sectors of interest: Commercial, Research, Education/Educational Training, Policy-Making and the Science Education for the General Public.

OpenUP dissemination will target the stakeholder groups identified in *Table 7*.

Table 7: Stakeholders and beneficiaries

Stakeholders	Area of Interest	Description
Publishers	Commercial, Research	Commercial and scientist-managed publishers interested in developments in open science.
Researchers & Young Academics	Educational Training and Research	Researchers in Europe and beyond, with a particular emphasis on the disciplines covered by the OpenUP's use cases. Young researchers who have just started their career and need advice on publishing and on maximizing the impact of their scientific work.
Academia Educators and R&I Project Managers	Education, Research	Senior academic researchers in European universities who would like to support their students in publishing and disseminating their work. Senior academics and teachers who would like to stay on top of their field. Project managers who are interested in analysing the impact of scientific work and correlating impact to the use of different dissemination channels.
Local, national and EU policy makers & funders Project Managers	Policy-making	Decision-makers in governmental funding agencies who design interventions and fund programmes related to open science and innovation, in Europe and the world. Private funders, companies that fund independent research projects.
Commercial companies and research institutions	Research, Commercial	Companies and institutions that are interested in helping their researchers to use innovative dissemination channels and to analyze the impact of their research
Industry (IT providers, start-ups and SMEs)	Commercial Education Training	IT solutions providers and new tech startups developing software products, tools & apps for open publishing, open peer review, open metrics and open dissemination.
Citizens	Science education for the general public	Members of the general public with an interest in open science

As the list of key result areas become available, these will be ranked with respect to their relevance for specific stakeholders. The final selection of the top 3-5 key result areas will be agreed not later than July 2018. Ideally, the project will apply a 20/80 rule, ensuring that each of key result areas benefit at least 80% of the stakeholders.

4.2.3 Confirm partner commitments

The partners of OpenUP are committed to ensure exploitation of OpenUP results. Exploitation may be direct, as when a partner:

- Uses OpenUp results in further research activities outside the project
- Develops, or markets a product, or process or service based on OpenUp results
- Uses the results in standardisation activities

Exploitation may also be indirect via licensing.

At the time of writing, OpenUP is already developing a communications platform using existing Open Science channels and networks (e.g. OpenAIRE, FOSTER, Open Knowledge, RRI-tools, RDA)

Additionally:

- OpenUP will build upon results of OpenAIRE including peer review prototypes, impact metrics and e-infrastructures for open scholarship.
- OpenUP will leverage OpenAIRE's network of national OA desks for expertise, for outreach to policy makers, and for other dissemination.
- OpenUP will contribute to the design of scoring criteria for Open Science's Scoreboard.
- OpenUP will benefit from Frontiers continuing activity to promote open practices in Peer Review. Frontiers' research network Loop® is continuously updated with plug-ins for alternative metrics and protocols for open data exchange. Frontiers is also pursuing innovative dissemination through Frontiers for Young Minds (Frontiers dedicated science journal written by scientists and reviewed by a board of kids) and social media.

Partner commitments will be reflected in the Updated Exploitation and Sustainability Plan due September 2018.

4.2.4 Finalize exploitation plan

Once the 3-5 key result areas have been identified and the partners have confirmed their commitments for further exploitation, it will be possible to finalize the Exploitation and Sustainability Plan – the last step in the plan.

From July 2018 to August 2018 the partners will:

- Define targets, indicators and milestones to ensure the project's results are properly exploited after the completion of the current project.
- Specify guidelines for the transfer of project results outside the original project network.
- Produce the final Exploitation and Sustainability Plan, identifying for each key result area:
 - The solution to be developed
 - The needs to which the solution responds
 - The opportunities the solution addresses
 - Target markets
 - Potential users, main competitors and competitive advantages
 - Potential geographical coverage and economic size of target markets
 - Methods to disseminate generated results to the end users
 - Competition analysis
 - Comparison of the new knowledge and benefits generated by the OpenUp solution and its competitors
 - Collaboration planning
 - Identification of potential collaboration partners
 - Identification of the intellectual property that is needed and will be brought to the project, including for example information on knowledge and inventions
 - Preliminary discussions with potential partners
 - Preliminary definition of the legal form of the collaboration and of related IP issues
 - Work necessary and time to market
 - Identification of required development and dissemination activities
 - Identification of the time and resources required for each activity
 - Timeline to bring the proposed solution to market
 - Timeline for dissemination activities
 - Business model
 - Pricing, if applicable
 - Financial Plan, if relevant
 - Preliminary definition of management structures and procedures, including governance, policies, systems, structures and operation processes and risk management