DELIVERABLE 7.4

Dissemination Strategy

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Abstrac	This deliverable corresponds to D7.4 Dissemination strategy and describes the dissemination plan. It is mainly based on the development of a network dimension. The work focuses on: creating a transversal network connecting the twin Open Schooling projects of the HORIZON group; the dissemination and capitalization of activities produced in these three years; define the most useful network and governance model for OSHubs; identify EU financing opportunity for Network's strategy (short and long-term).
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List of Acronyms

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ACRONYM	DEFINITION
AE	Unternehmensgruppe Der Stadt Linz Holding Gmbh (Ars Electronica)
CCSTI	Centre Culturel Scientifique Et Technique Association
EC	European Commission
EU	European Union
FAB	Onl'Fait
MFCR	Município de Figueira de Castelo Rodrigo
MS	Member States
MoU	Memorandum of Understanding
SCICO	Epistimi Epikoinonia
IH	The Hub Sicilia Societa Cooperativa
OS	Open Schooling
OSHub	Open Science Hub
OSHub.Network	Open Science Hub Network
SALL	Schools As Living Labs
SBC	Social Business Canvas
SCIN	Science In Cz Sro
SDEs	Social Design Experiments
SEAS	Science Education for Action and Engagement towards Sustainability
SDEs	Small and Medium-sized Enterprises
STE(A)M	Science, Technology, Engineering, Art, and Mathematics
TCD	Trinity College Dublin
ULEI	Leiden University
WP	Work Package

Executive Summary

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This report documents the Dissemination Strategy of the OSHub Model that has been created in the context of the project by eight of the nine partners involved. It follows the path already started with D.7.1 Vision and Value Proposition[1], D.7.2 Business Model[2] and D.7.3 Monitoring Report[3].

The dissemination plan is mainly based on the development of a network dimension. The work focuses on:

— The dissemination and capitalization of activities produced in these three years.

— Creating a transversal network connecting sister Open Schooling (OS) projects funded by the Horizon 2020 Framework Programme for Research and Innovation.

— Define the governance and network form for a consolidation perspective; identify forms of European financing useful for the individual lines of activity, for management costs and for the long-term network's projects.

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1   D7.1 Vision and Value Proposition: https://opensciencehub.net/download/D_7.1.pdf

2   D7.2 Business Models: https://opensciencehub.net/download/D_7.2.pdf

3   D7.3 Monitoring Reports: https://opensciencehub.net/download/D_7.3.pdf

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1. INTRODUCTION

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1.1 Background: about OSHub.Network

The Open Science Hub Network (OSHub.Network), a consortium of nine partners across Europe, engages schools and local stakeholders in research and innovation as a tool for sustainable community development.

More specifically, the OSHub.Network is establishing a European network of community hubs – OSHubs, in communities that traditionally do not engage with research and nnovation due to various barriers, geographical location, socio-economic status, or ethnic minority group background. OSHubs inspire, empower and engage citizens – from school children to senior citizens – in STEAM (Science, Technology, Engineering, Arts and Mathematics) learning and research opportunities, grounded on collaboration with societal agents.

As such, local OSHubs work as mediators in their local communities, positioning schools as active agents for collaboration between civil society, enterprises, research institutes, and families. This is performed by promoting an open schooling approach grounded in community-based participatory research practices: throughout this process, schools and communities identify local relevant challenges, which are then transformed into relevant research and innovation projects, led by students and teachers, in collaboration with local stakeholders.

The OSHub.Network is developing a common methodological framework, that allows each OSHub to identify and analyse local needs, issues, opportunities and relevant actors, in order to address socio-economic, geographical, gender equity issues, and untapped growth potential. Inspired by the "Mission-Oriented Research & Innovation in the European Union"[4] approach, developed by Mariana Mazzucato, OSHub.Network will define a set of Open Schooling Missions, aimed at addressing local relevant challenges linked to the Sustainable Development Goals. These Open Schooling Missions will then constitute the basis for the creation and development of the open schooling projects, enabling real collaboration across communities.

Importantly, to ensure diversity, inclusion and sustainability, in each OSHub location, there will be a local management board with representatives from local stakeholder groups – schools (including students), families, research institutes and universities, enterprises, industry, media, local governments, civil society organizations and wider society – which will be involved in all key processes and decisions regarding local OSHub programmes and initiatives.

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4   Mariana Mazzucato (2018), Mission-Oriented Research and Innovation in the European Union – A problem solving approach to fuel innovation-led growth', European Commission, Retrieved from: https://ec.europa.eu/info/sites/info/files/mazzucato_report_2018.pdf

By supporting local schools and communities with the tools and network to tackle relevant challenges, OSHub.Network aims to create local impact while simultaneously promoting an active global citizenship attitude, thus contributing to community development, innovation and well-being.

To encourage usage and maximise impact in Europe and beyond, all resources, products and solutions developed by OSHub.Network will be fully based on Open Standards, such as open education, open technology, open science, open hardware, open design and open architecture. Also, OSHub. Network will create an online platform to share OSHub expertise, resources, and best practices with all OSHubs, their partners and the communities they serve. To ensure the legacy and reach of the project, all OSHub.Network resources will also be shared on existing large online educational repositories, and relevant national networks and repositories.

Finally, OSHubs will develop a legacy and sustainability plan, and will work closely with local governments, to ensure that each local OSHub has the tools and resources to continue beyond the lifetime of the project, and that the Open Schooling approach is incorporated in the school vision and organizational structure.

By the end of the project, it is expected that the OSHub.Network will have impacted 25 000 students, 1 250 teachers and 4 000 members of the community, through involvement in more than 150 school-university-industry-civil society partnerships in open schooling projects and activities.

In the long-run, we envision OSHubs as education brokers in their local communities, supporting local school networks to incorporate Open Schooling in their vision and organizational structure, leading to sustainable quality of education. Most particularly, OSHubs will facilitate the bridge between the needs and realities of schools and their local context and resources, as well as brokering for implementing national/regional policies, passing along signals from schools when policies are failing and advocating for context-sensitive policies.

1.2   Purpose of this report

OSHubs have developed a legacy and sustainability plan and worked closely with local governments to ensure that each local OSHub has the tools and resources to continue beyond the life of the project and that the open schooling approach is incorporated into the school's vision and organisational structure.

OSHubs worked, together with the IH team, on the sustainability assessment and had a series of meetings and conversations dedicated to understanding whether, and to what extent, the project partners and individuals involved can or will continue the actions and carry on the vision of the OSHub project. Through the input received, the IH team aimed to outline a course of action for the future of an international network to continue the legacy of the OSHub project.

Therefore, for the purpose of sustainability, network and governance models (open, diffuse and cross-sectoral) were analysed, as well as, possible forms of European funding for both the network organisation and individual projects. The latter were selected and reported with a focus on transversal activities and the 2030 Agenda Goals addressed during the development of OSHub activities. In addition, a detailed focus on a new network and foundation model as a participatory management body was reported.

2. OSHub.Network Future and Legacy

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The OSHub.Network, a consortium of nine partners across Europe, engages schools and local stakeholders in STEAM research and innovation, as a tool for tackling local relevant challenges and contributing to sustainable community development. It is establishing a European network of community hubs – OSHubs, in communities that traditionally do not engage with research and innovation due to various barriers, geographical location, socio-economic status, or ethnic minority group background.

In this chapter we start by describing an activity organised by IH about sustainability scenarios for the different OSHubs (2.1 What path at the end of the project). And then, we provide information about two tools that are being developed by the consortium aimed at sharing and disseminating the knowledge and experience built throughout the project (2.2 Handbook of OSHub.Network Workshops and Activities; 2.3 Handbook of OSHub.Network Impact Evaluation Toolkit).

Also, noteworthy, the consortium is also developing a How to set up your OSHub toolkit that will provide practical guidelines grounded on the experience of each OSHub and on the social innovation processes followed by each hub based on the training and guidance provided by IH throughout the project.

2.1 What path at the end of the project?

Figure 1: OSHub team at the Consortium Meeting that took place in December 2022, in Syracuse, Italy.

On 2nd and 3rd of December, 2021, members of the OSHub project consortium gathered in a Consortium Meeting that took place in Syracuse, Italy. IH conducted the session **OSHub legacy: sustainability scenarios.**

The session is directly related to both the activities covered within D7.2 Business Models, D7.3 Monitoring Reports, and within this report. IH sought to get the teams of the eight OSHubs to:

— reflect on the path taken during the compilation of the SBC;

— have the tools necessary for an informed view of the future of OSHubs;

— have a useful key to decide whether or not to open the door leading to the post project OSHub period.
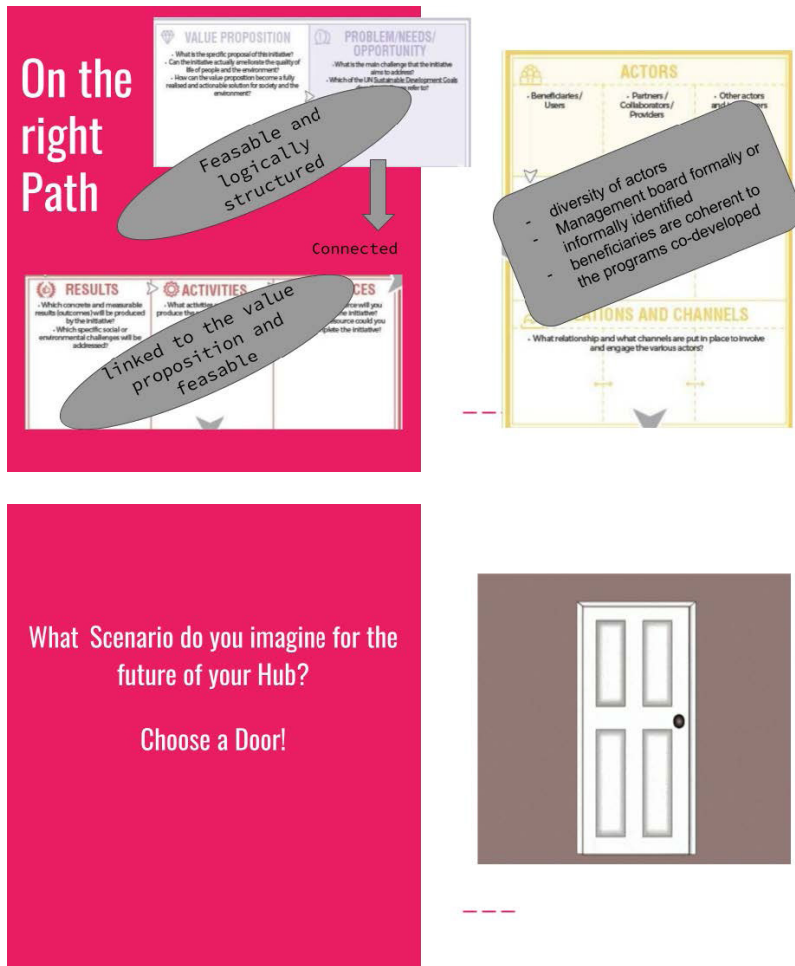
Figure 2: Slides about: "OSHub legacy: sustainability scenarios" (presented at the event in Sicily).

Figure 3: Exercise "OSHub legacy: sustainability scenarios" (presented at the OSHub consortium meeting in Sicily).

The IH team introduced the future of OSHubs by trying to bring out the fact that it was necessary to choose whether to continue or not. The IH team asked to be creative, and as we have repeatedly emphasised in the other Deliverables, one of the goals of engaging the teams was to come up with OSHub sustainability solutions. The result of the conversations that arose revolved, for example, around potential services by the teams (training activities or festivals), search for public and private funds. Moreover, this work was the premise of the session held in July, 2022, at the OSHub Final Summit, that took place in Figueira de Castelo Rodrigo, Portugal, whose contents are in the next chapter of this report.

2.2 Handbook of OSHub.Network Workshops and Activities

One of the pillars of Deliverable 7.3 is indeed the dissemination of the activities that are carried out in these three years by the 8 OSHubs. A key piece of the project's legacy is Deliverable 4.5 Handbook Activity[5], which provides an overview of a number of activities developed by localOSHub throughout the timeline of the project, so that they may be adapted and implemented by educators. Also through networking all this can be shared with those who can disseminate this information, but also replicate, transfer, scale and capitalise on the work done.

OSHubs operate as mediators in each local community, where they support schools to become active agents for collaboration between families, universities, industry, local governments and civil society. The activities position schools as drivers for societal innovation and community well-being, by engaging in real-life projects where school and community needs are at the core of the collaborative projects undertaken.

That document (D4.5) contains a variety of workshops and activities that teachers and educational facilitators may adapt and use to implement open schooling practices within their own contexts. It provides descriptions of various activities that were developed by project partners in the OSHub network. These workshops and activities will introduce both learners and teachers to open schooling practices, and demonstrate the benefits of working with local stakeholders towards the development of communities using research and innovation. The activities are transdisciplinary and approach societal challenges through such a lens, incorporating science, technology, art and culture. All educational resources contained in this handbook are open access and allow for adaptation into different contexts.

The activities and workshops are separated into various categories:

— **Inspiration Workshops:** Inspiration workshops were developed and implemented by Trinity College Dublin, OSHub Ireland. The overall

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aim of these workshops is to spark curiosity in topics across science and citizenship with a large focus on discussion and students bringing their own lived experiences to the table.

— **Learner Activities:** A number of activities showcased here allow learners to explore scientific and technological topics from multidisciplinary perspectives, such as understanding biodiversity through sound, learning electronics to help the local community, or considering the ethics of research. They focus on skill building and the applicability of science to everyday life, and are easy to implement (with the right equipment).

— **Reflection and Evaluation Tools:** Reflecting on an educational journey is important, not just for the learner but also for the educator. It allows the learner to look further than just the topic they learned about, but to consider the entire process, and how they felt during this process, allowing for an emotional response to be explored. Reflecting allows the educator to consider what they felt went well, and what they too learned in the process from the learners that they can utilise the next time they facilitate the same or similar experience.

— **Educator Trainings:** It is aimed to empower educators to foster open--schooling practices within their community. It introduces educators to the concept of Open Schooling, demonstrates how to facilitate co-creation and innovation sessions, and provides them with the skills and knowledge to foster collaborations between their school, their learners and local community.

In the spirit of Open Science, links to resources are found within the handbook and are open-access. All activities are flexible and adaptable to suit the needs of the educators and learners and teachers may use the skills gained from these workshops to then successfully implement the activities outlined in this handbook. This document is a primary tool for disseminating the project's legacy, which has great value and potential for students and teachers.

2.3   Handbook of OSHub.Network Impact Evaluation Toolkit

The second tool useful for the dissemination strategy is the Deliverable 5.4 Impact Evaluation Toolkit[6]. This handbook provides guidelines and tools to assist with evaluation of activities and projects within OS programmes.

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6   D.5.4 OSHub.Network Impact Evaluation Toolkit: https://opensciencehub.net/download/D_5.4.pdf

The handbook provides an explanation of what evaluation is, its role within OS, and how frameworks can be created depending on the evaluation goals. Different evaluation forms are clearly defined, allowing users of the handbook to select one that works for their context.

From this handbook, users will:

— learn what evaluation is, and the importance of it in general, and in the context of open schooling;

— become aware of the different evaluation forms and when to use them;

— learn how to create a long term evaluation framework containing multiple evaluation forms;

— become equipped with a set of evaluation tools that have already been tried and tested in the context;

— have the knowledge to adapt these evaluation tools to suit their own context and goals;

— be empowered to implement evaluation into their own open schooling practices.

The handbook ends with an overview of five evaluation tools that have been utilised by the OSHub Network. A description and implementation guide of all tools are provided, as well as a case study of how they were implemented by a particular hub or for a specific activity/programme, and an overview of the findings. This demonstrates indicative use cases for each evaluation tool.

The tools outlined within this toolkit were first described in Deliverable 5.2 Research Instruments, and were implemented by each OSHubs as described in D5.3 Baseline Study.

3. Open Schooling Sustainability

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"(...) the development of partnerships between schools, local communities, Civil Society organisations, universities and industry should contribute to a more scientifically interested and literate society and students with a better awareness of and interest in scientific careers. In the medium term the activities should provide citizens and future researchers with the tools and skills to make informed decisions and choices and in the long-term this action should contribute towards the ERA objectives of increasing the numbers of scientists and researchers in Europe."

OS and Collaboration on science education
SwafS-01, European Commission

This chapter focuses on the transversal network connecting the sister OS projects funded by the HORIZON program, describes the OStogether networking and dissemination workshop that took place at ECSITE, and at last focuses on a proposal *TOGETHER*, developed jointly with several EU and global leaders in OS from different EU-funded OS projects.

We feel it is important to point out the fact that the project's legacy also develops and spreads thanks to relationships with experiences similar to OSHub and relationships with entities and personalities outside the project but connected to it.

3.1 Identifying sister Open Schooling projects with a like and linked legacy

OStogether is a joint initiative of 9 projects funded by the European Union's Horizon 2020 Programme. The OStogether initiative is driven by a shared vision: to contribute to a more scientifically interested and literate society and to the development of more active, informed and responsible citizens, by opening up schools to society and society to schools, through the development of meaningful partnerships and projects between schools and community stakeholders. As such, OStogether has launched a quarterly newsletter and organises periodic networking sessions on topics relevant for OS (every 6 weeks).

Figure 4: Logo of OStogether initiative.

Within this section of the report we talk about **4 sister projects of the OSHub project**, and also additional potential participants in the international network, that we will discuss more in the following pages.

We decided to report on four successful experiences in order to: offer further useful insights to those who decide to approach OS and who read this paper; to give value not only to the OSHub project but also to the other goals achieved by the same call; and most importantly, because the dissemination of an action cannot be successful without being connected to the realities around it. We think it is useful to contextualise in order to optimise the outcome, but also to spread awareness of the fact that the number of those who can be integrated into the OSHub network are really many.

These four projects are part of OStogheter, but they are not the only ones, these four were compared because they are the ones that, according to the work carried out by IH, are most useful to tell in order to better understand the work carried out during the OSHub project. This Deliverable is a dissemination venue so we decided to choose which projects to tell about by also targeting those that have a website in which to easily find out what work has been done and/or is in progress; not only, a common point in these project is to experiment new training approaches – especially a teaching approach that puts students at the center, and makes them players – .

For example, in order to "study" the four projects to follow, we browsed through their websites, and it turned out that the way of narration, and the type of information that is highlighted, show among all of them a behaviour most similar to the OSHub project. We would like to emphasise that the other projects certainly have a lot in common as well.

The sister projects are:

— Science Education for Action and Engagement towards Sustainability (SEAS);
— Schools As Living Labs (SALL);
— CONNECT;
— PULCHRA.

Table 1: Description of 4 sister projects of the OSHub project.

TITLE OF PROJECT	Science Education for Action and Engagement towards Sustainability (SEAS)	Schools As Living Labs (SALL)	CONNECT	PULCHRA
START DATE – END DATE	Start date: 1 September 2019 End date: 31 August 2022	Start date: 1 September 2020 End date: 31 August 2023	Start date: 1 September 2020 End date: 31 August 2023	Start date: 1 September 2019 End date: 31 August 2022
ABOUT	The consortium develops **tools and methods** that facilitate collaboration between schools and local communities facing sustainability challenges.	SALL aims to concrete **new ways to approach science education programs** by fostering collaboration between schools and local communities based on an open-innovation methodology.	CONNECT is an inclusive, sustainable model for **enabling more secondary schools to adopt OS** by embedding science-action projects in the core curriculum, using participatory science approaches with universities and enterprises.	PULCHRA explores the **OS concept through the theme "Cities as urban ecosystems"** and creates new partnerships in local communities to foster science education for all citizens
CONCEPT – VISION	— Conceiving scientific literacy and science learning as/for transformational action and social change. — Focusing on the power of the narratives of change that emerge in discourse/communicati on. — Conceiving change as involving three interconnected spheres: the personal, the practical and the political spheres. — **Not just learning, but expansive learning, that is, the deep learning that takes place when individuals engage**	— SALL proposes a new framework to make STEM teaching more relevant, systemic, and inclusive and to do that for all of our students. It adopts the concept of OS in science education where schools become agents of community well-being by creating new partnerships with other local actors and addressing local issues relevant to them. — SALL proposes to transform schools into living labs. This open-innovation methodology puts people in charge of the innovation process. It involves different kinds of partners in	— According to recent research, students lack 'science capital', especially those from disadvantaged groups. — CONNECT supports secondary schools to adopt OS, integrating science-action in the core-curriculum and using participatory-science with the community: families, universities, and enterprises. CONNECT's main pillars: — **OS** enables schools to create a flexible and inclusive learning environment inspiring the students to explore the world through science.	— The PULCHRA project proposes to bring trust in the method of science and in evidence based decision making. It will help build recognition of the links between the natural and socio-economic environment. Awareness will then be gained of the **importance of citizen participation in shaping our living environment and the necessity of international collaboration in facing common urban issues.**

in actively and consciously **addressing,** transforming and re--conceptualizing the goals of their collective practice/activities.

a private-public-people partner-ship and integrates research and innovation processes in real-life communities and settings.

— Together, they build new pro-ducts, new services, new uses, etc. through a cycle that typi-cally comprises: Co-creation, Exploration, Experimentation, Evaluation phases.

— **Science-action** encourages students to learn and use scientific knowledge, skills, and attitudes to benefit their lives, their community, and society.

— **Participatory science** increases students' interest in science through engaging families, universities, and enterprises to be part of school-life activities.

METHO-DOLOGY

— SEAS takes as a point of departure an intervention-ba-sed methodological design inspired by an emerging tradition known as **Social De-sign Experiments (SDEs).** SDE methodologies focus on the achievement of social and insti-tutional transformation towards more socially just systems of teaching and learning. A colla-borative design process, where learners, community, and other stakeholders, together identify and create the learning goals and materials, and connect them directly with goals of so-cial change and social justice.

— As part of SEAS' SDE appro-ach, they organize **ChangeLab Meetings/Workshops** in which consortium members mediate and dynamize interactions between teacher, students, and other community stakeholders in order to facilitate the esta-blishment of shared goals and the identification of feasible and relevant sustainability challenges.

— SALL roots its approach in existing **open-schooling metho-dologies and other Living Lab initiatives.** The project creates a living-lab-based methodology and develops training and support materials. The methodology and the materials are tested and evaluated in 42 pilot school communities across 10 countries. The project then carried out a larger-scale implementation of the living-lab-based methodology involving additional 370 schools, reaching 412 school communities in 10 countries.

— The methodology is adapted and new tools are created and tested to support school communities in designing and implementing living lab activities. SALL also prepares the ground for **sustainable living-lab-based OS activities in Europe's schools throug strong community-building, networking, dissemination, as well as policy-oriented interventions.**

CONNECT facilitate partnership interactions in Europe, Africa, and South America, for productive lear-ning linked to R&I, maximising the value of partnerships, and making science careers more inclusive for disadvantaged learners by creating:

— A **structured partnership sys-tem** to give partners a step--by-step process to follow, with induction and coaching.

— A partners-projects database to provide participants with information and best practice guidance about partnership options.

— A Care-Know-Do framework for embedding a science-ac-tion within a science topic.

— Customizable project resour-ces about **future-orientated scenarios.**

— Partnership policies for schools, universities and enterprises.

PULCHRA advances its goals by carrying out the following actions:

— To develop open source edu-cational e-material, e-guideli-nes and smartphone apps for analyzing the urban ecosystem and challenges.

— To develop and **use a City Challenges Platform ame-nable to students, parents, educators, citizens, scientists, local administrators including a collaboration feature allowing experts to guide non-experts in terms of the interpretation of findings.**

— To develop the City Science Teams with the participation of the school community, scientists, local administrators, citizens, etc.

— To "Experience Science" through the organisation of two pilot City Challenges, also open to the general public, in the science fields as related to the cities as urban ecosystems.

CONSOR-TIUM	SEAS has developed and is supporting 6 OS networks in Austria, Belgium, Estonia, Italy, Norway and Sweden.	Project partners from: Greece, Portugal, Croatia, Estonia, Serbia, Spain, Cyprus, Israel, France, The Netherlands; and also include ECSITE, Netcompany-Intrasoft, Lisbon Council.	The consortium consists of 10 distinguished members from 7 countries (Greece, Denmark, Spain, Romania, Portugal, Brazil, UK).	The PULCHRA consortium consists of 12 partners from 10 EU Member States (Greece, Germany, Poland, Czech Republic, Italy, Latvia, Romania, Ireland, Cyprus, Sweden).
WEBSITE	*https://www.seas.uio.no*	*https://www.schoolsaslivinglabs.eu*	*https://www.connect-science.net*	*https://pulchra-schools.eu*

Through the comparison of the table above, we can affirm the common goal of improving the beneficiaries' prospects in terms of their potential in the world of work and their role in society. All these projects and OSHub want **more young people to aspire to a career in science, and to be able to think scientifically in their everyday life**. The vision has obviously similar traits, what makes the difference is the methodology, the tools that have been put in place. All, however, were created using the importance of community and networking activity.

In addition, having the ability to create new approaches, methods, and tools brings out the possibility – even in these projects and not only in OSHub – to optimise the implementation and success of the project's legacy. Not only that, the relationship that is created between the project team, the schools and the target territory/city appears valuable: it is important that people feel the change in improvement that the project produces. So we can say that measuring the impact of these projects takes on value in relation to tools for repeating them and the experience of direct and indirect beneficiaries. It is important to focus on helping the new generation to develop "critical thinking", something like that is useful for this goal.

3.2   Exchange of practices across the OS community (2022 ECSITE Pre-Conference)

Ecsite is the **European network of science centres and museums**, linking science engagement professionals in more than 320 organisations and 50 countries. Ecsite's vision is to foster creativity and critical thinking in European society, emboldening citizens to engage with science. Its mission is to inspire and empower science centres, museums and all organisations that engage people with science, and to promote their actions. Founded in 1989,

Ecsite connects member institutions through projects and activities and facilitates the exchange of ideas and best practice on current issues.

Figure 5: 2022 Ecsite Conference.

The 2022 Ecsite Conference took place in Heilbronn, Germany, on 2-4 June 2022. It was hosted by Experimenta. Conference sessions and the Business Bistro took place in a lively camp, created specifically for the Ecsite Conference, a five-minute walk from Experimenta.

Figure 6: Sustainability tool, session held by IH during the 2022 Ecsite Conference.

The **OStogether group played** a leading role in 1st June 2022 during the OS pre-conference workshop[7], there were 5 OS projects funded by the Horizon 2020 Framework Programme for Research and Innovation. The OStogether group invited people to rethink learning boundaries and discover how schools and students can be supported to become agents of community well-being through the practice of OS. This was an opportunity for all educators who work with schools, to gain inspiration and reflect together with other institutions that have been experimenting with new methodologies of learning. **During the workshop there was a collection of talks, a period of reflection and some practical exercises**.

There are many challenges that occur when developing, testing and implementing new learning approaches with schools and their communities, and this workshop introduced participants to innovative pedagogical tools which will help to find solutions.

From the OSHub project team, Maria Vicente, Coordinator of the Open Science Hub project, Universiteit Leiden, The Netherlands, took part in the Tools carousel and presented how OSHubs work on the ground and engage with their schools and communities, by providing real cases and projects across the network. Cristina Olivotto, Coordinator of Onl'fait, Geneva, Switzerland, presented the **specific OS approach developed by the OSHub**. Rosario Sapienza, President and Founding Member of IH, Syracuse, Italy, held a session on Sustainability, explaining the four **parameters of sustainability (replicability, transferability, scalability, and capitalization)** that were used in the study of activities, space, and network of OSHubs. Intense discussion emerged from sharing the use of this tool, an in-depth argumentation of which you can read in D7.3 Monitoring Reports. Brendan Owens, Public Engagement Manager, Institute of Physics, Dublin, Ireland, took part in the tools carousel and presented the **stakeholders engagement tools** developed by the OSHub project. Furthermore, within D4.5 Handbook of OSHub.Net Workshops & Activity and D5.4. Impact Evaluation Toolkit is available with a deeper understanding of the tools mentioned. Shaun Ussher, Learning and Engagement Researcher, Trinity College, Dublin, took part in the tools carousel and presented the **evaluation methodology** adopted by the OSHub project.

Alix Thuillier
@AlixThuillier

The #ecsite2022 conference started yesterday with the pre-conference workshops. I had the pleasure to co-organise the #OpenSchooling pre-conference workshop with people from @OStogether. It was a truly inspiring day and such a pleasure to finally meet people in real!
https://twitter.com/Ecsite/status/1532240697176338432

Jun 2, 2022

Figure 6: Sustainability tool, session held by IH during the 2022 Ecsite Conference.

Figure 7: Sustainability tool, session held by IH during the 2022 Ecsite Conference.

By the end of the workshop on Sustainability, participants discovered how to transform formal science education with the help of actors from within the community: teachers, policymakers, researchers and other societal actors. The tools and skills learned will help to tackle many different obstacles on the road towards OS.

3.3 Designing solutions for the sustainability of OS network

With the aim of creating solutions for the sustainability of the OS network, and the corresponding activities and programs, OSHub joined forces with partners from the other consortia – OSOS, PHE-RECLOS, Make It Open, SALL and RoadSTEAMERS – to create a proposal called: TOGETHER: Scaling Up Open Schooling.

TOGETHER involves EU and global leaders in OS to co-design and implement an ambitious set of action along three main axes:

— a child/family-centred vision of innovation in education, based on listening to, participation of, and co-creation with young people and their families;

— establishing and solidifying local networks among schools, research organisations, tertiary education, and other social actors from the science, culture, creative and business sectors;

— developing innovative Citizen Science approaches to provide ownership and sense-making in science education.

The TOGETHER consortium proposes to develop a lifelong and life-wid learning framework for science education based on OS aimed at supporting schools, formal and non-formal education providers, families, universities, research institutes, companies and SMEs to integrate OS in their practices and institutional culture. **It is based on life-long and life-wide learning continuum for all and will have the following objectives:**

— 01. Enhancing technological and scientific literacy and responsible citizenship of young people, adult learners and their communities, and the uptake of science careers, through a science education learning continuum framework that promotes a youth and family-centred perspective of OS.

— 02. Enhancing human capital through OS, by strengthening or creating new partnerships that foster mutual learning among science education, research and civil society.

— 03. Enhancing cross-community collaboration through mentoring, twinning and joint communication and dissemination actions.

— 04. Developing and implementing legacy and sustainability plans through partnerships with the business, creative, and culture sectors and by promoting institutional and policy change.

The consortium created for this partnership ambitions to bring together the best of os and open science. Unfortunately, the project did not make it through the call[8] for which it was created, however, it is the start for a collaboration between those who took part and the content that within the proposal was formed.

4. Co-creation session International Network

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On the 20th of July 2022, members of the OSHub project consortium as well as local partners that have engaged in the project in the three years of implementation gathered in Castelo Rodrigo,

Portugal, during the OSHub Summit, to discuss the next viable steps to consolidate the network as the project reaches its end, so to ensure capitalisation of results and dissemination of knowledge.

IH conducted an in-depth session on the creation of an international network shaped by the OSHub project. A co-creation session to think and develop together specific actions and projects that could be developed locally from the learnings, connections, tools gathered internationally and how to keep this network alive in a functional and meaningful way.

IH followed the results of debates and meetings with partners concerning the future of the network, and above all a more extensive vision of the network, from the local to the international level, and presented a **dilemma** to the attention of individual OSHub members and teachers.

Explanation of the dilemma:

— on the one hand, experience shows that there are undeniable advantages in staying connected, progressing together and building common opportunities

— on the other it remains clear that keeping the network active has a cost, and requires a direct investment by each of us which is not currently covered by any direct financing

We therefore find ourselves at a crossroads, with two options in front of us regarding this question *"Do you choose the network?"*:

— choose the blue box (Box 1 – "No, thanks!") means choose the option of not investing in the network, either as entities or as people, leaving to chance and destiny our chance to connect, between realities that operate in various contexts.

— choose the red box (Box 2 – "Yes, please!") means to bear the cost of activating and sustaining the network, assuming responsibility, as entities / organisations and as people.

IH asked **the participants to respond first and foremost as individuals**, before responding as organisations. Personal commitment is prioritised in this exercise, although people can also commit and speak on behalf of the organisations they represent.

Figure 8: Exercise "Impact perception by the OSHub team and respective partners".

Next, the box was opened and the following items were found and explained:

Table 2: Description of the two boxes.

BOX 1 No, thanks!	BOX 2 No, thanks!
1. Keep it agile 2. Free energy 3. Miss opportunities 4. Concentrate on your stuff 5. Loose connections 6. Ride serendipity	1. Scope 2. Content 3. Channels 4. Organization 5. Governance 6. Formalization

Choosing "No, thanks!" represents more freedom, the opportunity to be more focused on something else, but also missed opportunities. Those who chose this box were asked not to join the next session, but they could be auditors.

Now let's get into what was discussed at the tables of those who chose to engage in the network, i.e., those who chose the Box 2 – "Yes, please!". These were divided into two groups, Group A and Group B, which worked in parallel sessions, moreover, each table appointed an ambassador, who in the group switchover reported on what had happened previously and in the plenary, at the "Harvesting & wrap up" session, presented what had been discussed.

Only two participants in the session decided not to join the discussion at the meetings.

4.1   Workshop Table #1 – Network

"Scope, Content and Channels"

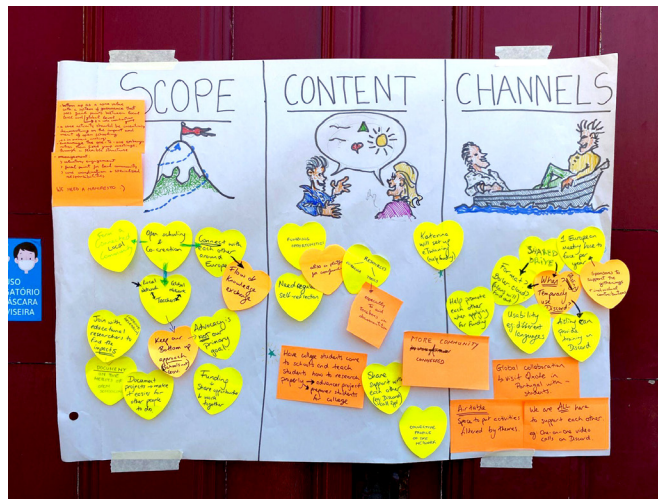The first table was called to discuss the first three elements of the network, namely: scope, content and channels.

Figure 9: Outputs of the exercise "Impact perception by the OSHub team and respective partners".

4.1.1 Workshop Table #1 – Network

The group was first asked to reflect on the aims of the network, deciding at least for the minimal scope in order to find the best balance between ambitions and expectations.

At the most basic level…

The discussion started with a reflection on whether the network should aim for a top-down approach, hence focussing on policy and advocacy work at institutional level, or whether it should adopt a bottom-up approach, aiming at maximising the engagement of local actors in OS. The group was almost unanimous in agreeing that the primary aim of the network should be that of school engagement at local level, with teachers as local focal points, and that the network should be facilitating such local actors to better engage with OS, through a flow of knowledge exchange and through co-creation across local communities.

One step further…

Related to co-creation, the group agreed that the network should also be a space where to monitor funding opportunities for new projects and gather potential partners to co-develop projects together. This would require the establishment of a stable fundraising unit with the network, managing on a regular basis all related activities to fundraising. In addition to calls and tenders as a source of funding for new projects, it was suggested that the network could also act itself as a crowdfunding platform for OS projects.

If the full engagement of members is achieved…

A third pivotal point, matured after the experience of the OSHub project, relates to the need of improving methods and capacities to document on the impacts and merits of OS, with a view of

building a solid repository of knowledge and evidence to back up future proposals for OS projects as well as enhancing the credibility of the work done.

4.1.2   Content

The group then moved on to discuss what, in practical terms, will be shared through the network and the topics at the core of its activities. The discussion thus followed closely the aforementioned scope, with a significant effort in translating into practice the mission of the network.

At the most basic level...

At the most basic level, the network will serve as a platform through which members can share tools, resources and project ideas, so that local actors can better engage in OS within their local communities and learn and improve practices through access to a global network of practitioners. This system will be supported by a sharing of expertise, whereby individual support can be provided to members of the network on specific tools and resources.

One step further...

Another action item for the network would be that of developing a system for documenting impacts of OS projects. This would facilitate teachers in particular on the reporting phase of the project, which is usually identified as one of the greatest challenges. To this end, it was unanimously agreed that the network should, as much as possible, aim at engaging educational researchers, universities and research centres to capacitate network members in documenting and reporting.If a fundraising unit is established, a system to monitor funding opportunities for OS projects as well as a platform for networking on the basis of project proposals should become a core activity of the network.

If the full engagement of members is achieved...

Strategies and actions to realise engagement of the research sector would need to be further developed. One proposal put forward by the group was that of setting up a system whereby college students are invited to schools to teach students how to research properly. This would have the double benefit of a) capacitating OS projects on documentation and research techniques, b) make OS projects an effective strategy in preparing students for college.

4.1.3   Content

Lastly the group was prompted to reflect on the means of exchange and on the regularity of the exchange, in particular in relation to costs and available resources.

At the most basic level...

The main channel to keep the network connected has been established through a Discord channel (accessible *here*). Discord has been chosen as the main channel for a variety of reasons, including, for example: a) free access to all features, b) management tools for large groups, including separate channels with different levels of access permissions for different users as well as very powerful one--to-one interfaces, c) possibility to share resources and create specific forums dedicated to them, d) various extra features such as voice-channels and video calls, users notifications.

In particular, Discord was preferred to others in order to avoid unstructured group-large discussions and rather make the network function more on the basis of one-to-one communications or through topic-based discussions, with the possibility of opting in and out. The group also directed attention to the need of enhancing usability in different languages.

One step further…

A helpful objective is to use the network as a system to organise existing information and make it more useful and accessible to users.

One element on which the group did not reach a consensus was on the use of open source databases to store resources and tools. Nevertheless the possibility of coupling an open source database with the Discord channel has been considered. In addition, creating an *E-twinning* access point through the network has also been proposed as one of the viable options to better connect schools and expand the reach of the support available beyond the members of the network.

If the full engagement of members is achieved…

Notwithstanding this online dimension, the group agreed that the in-person dimension of the network should not be disregarded. The group proposed to establish a yearly global gathering of the network hosted on a rotating basis by the members of the network, though more discussion is needed regarding organisational and financing aspects. It was suggested that global gatherings could be financed mainly by sponsors and complemented by individual contributions. Along the same lines, it was suggested to establish "global collaboration programs" whereby members of the network can organise in-person visits to other members and learn from each other.

4.1.4   Conclusions and key points for the network manifesto

Overall, the following points emerged as constituting the very base of discussion on which to evolve and improve:

1. The bottom-up dimension of the network constitutes its core value. The organisational and managerial aspects of the network should take this into account by mimicking the local-to-global dimension in its management structures.

2. A core activity of the network is that of incentivising the practice of documenting and researching on the impacts and merits of OS.

3. The network should be organised in such a way that it nurtures human con-

nections and mutual trust and support among its members. For this reason priority should be given to one-to-one connections and in-person gatherings.

4.1.5   Additional comments on the management structure

— The network should be based on voluntary engagement.
— Each local community should have a focal point that acts as a bridge between the core coordination unit and the local community.
— The management of the network resided in a core coordination unit and in sub--units with specialised responsibilities (e.g. fundraising unit, etc..).

4.2   Workshop Table #2 – Network

"Organisation, Governance and Formalisation"

The second table was called to discuss the second three elements of the network, namely: organisation, governance and formalisation.
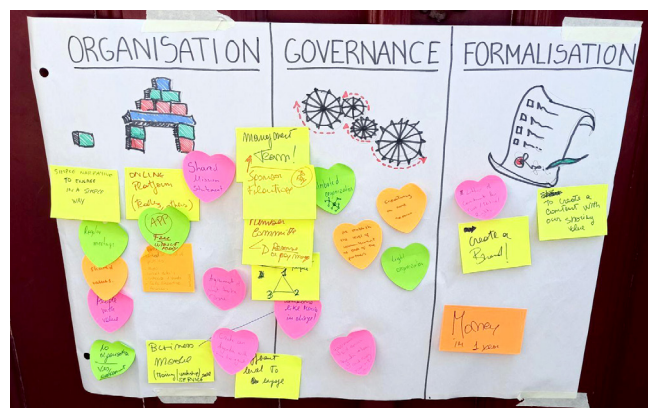

Figure 10: Outputs of the exercise "Impact perception by the OSHub team and respective partners".

First of all, the need to move from one element of the network to another was viral at this table, almost as if it were impossible to talk about organisation without knowing the formalisation, i.e. impossible to develop governance without having a clear organisation, and vice-versa.

4.2.1   Organisation

The group was first asked to reflect on the organisation of the structure, whether it should be simple or not, and whether there is an intention to establish a turn-over system in the organisation.

At the most basic level...

Firstly, we can divide the answers that were given by the participants into two statements:

— "No, organisation, Thank you!" followed the idea of agile networking, easy and open engagement. However, this way of thinking came up against a number of ‚demands'. First of all, it is a common idea that those joining the community must have a value, a content to share with the rest of the group as a means of implementing it: people with a value and a willingness to share is the basis.

— "No, organisation. Thank you! But yes, engagement. Please!" matured admitting the need, the second thread, for clear or at least simple organisation.

One step further...

After stating that it is not only members of the OSHub teams but also teachers who join the network, the proposal of an online platform (an app for free use) in engaging the network was welcomed.

The table migrated from a simple engagement to a platform in which the wish was expressed to see participants tell their stories: photos, contact information, interests and needs, skills and expectations, resources, and above all their own network to share as an additional resource! The next level of the organisation takes shape by creating a network in which the value of individuals is known and shared.

If the full engagement of members is achieved...

Engaging in the network means for participants to organise an agenda, within which there are goals and deadlines for regular, even if infrequent, meetings. Furthermore, the organisation passes the ball to Governance, which is able to create a business model capable of e.g. selling training programmes, workshops and services. That is, to set up a simple organisation but with feasible scalability goals.

4.2.2   Governance

How the decision-making process will take place is important for structuring the network. Who and how leads the process, i.e. setting up a system of turn over also in the governance offers the

possibility to be clear on how objectives and possible deadlines are carried out.

At the most basic level...

The name Maria Vicente was mentioned several times, someone even imagined entrusting the entire governance of the network to her. Someone else mentioned, however, that in addition to people of Maria's stature, the funds through which she conducted OSHub's project management were also needed. Topics such as non-authoritarian governance, the creation of a dedicated team, a group of representatives of the different partners were the basis of the conversation on the topic. But none of these options alone initially proved sufficient. Each of these strands is the basis of a general reasoning from which, however, the importance of someone (a group or a person) in charge is clearly evident.

One step further...

The next step leads the group to imagine the need for a management team, and the structure of a multi-level governance. At the apex of these levels is the possibility, for example, of creating a group of three people, that rotate among the members of the community. It was mentioned that those who will hypothetically carry out the governance activities must have the skills and competences that the team members recognise in Maria Vicente. That is, the ability to organise, to keep track of different groups of people, to be able to manage different situations, and to have the will to achieve complex objectives of activities in which people come from different places/states.

If the full engagement of members is achieved...

Moreover, linking governance to economic sustainability is crucial. The group has realised that it is not possible to ask three people (on a rotating basis) to take on such a big commitment as governance management without any remuneration. Therefore, one goal, for example, could be to seek sponsors (or other lines of economic sustainability) that provide the financial means to pay those who will manage the network's agenda and goals.

Therefore, it is useful to imagine a multi-level governance, which is agile and headed by a small group of people engaged in this activity.

4.2.3   Formalisation

It was necessary to understand whether we can build an international network just by talking to each other or whether something more is needed. For example, subscribing to a finalised strategy, or an agreement with the participants, or creating an Memorandum of Understanding.

At the most basic level...

Formalising who/what? It turned out that in order to formalise a group of people and especially to try to engage others, it is useful to create a specific brand. Something that is clearly recognisable to the outside world and through which to sponsor the creation of the network and the possibility of joining it.

Brand content, however, needs to be developed. One needs to create a core content to share, then formalise something starting from the specific content of what one is. In fact, once the specific content is understood, it will be easier to compile a network charter to share and promote.

If the full engagement of members is achieved…

Finally, once again, the issue of economic sustainability is a limitation, an opportunity/problem to be solved. Instead of deciding today which path of formalisation to take, it is possible to plan an agenda of e.g. one year. At the end of this period, if the resources to formalise a community have been found, then go for it.

4.2.4 Channels

The group tried to reason about the feasibility of the network structure. In this way some critical points and possible solutions emerged.

At the most basic level…

The reasoning behind the organisation's structure is the idea that it is important to share the value of the individuals engaged in the network. Fundamental is that a relationship structure is created within a platform (for more information on this consult section "4.1 Workshop Table #1 – Network" from this report).

One step further…

How many people are engaged in management activities? It was also discussed in depth to better understand the number of those in charge (one, two, three, five?).

The options were: 1) a governance in which everyone would be included equally (the feasibility of this model lost its value during the conversation); 2) entrusting one person with the management of everything (in relation to this point of view, the problem immediately came up of having to hire that person economically as well, and in order to pay one person it is first necessary to formalise the group and then hire employees); 3) a multi-level governance, with a group of three people to carry on the network's connections. This last option has been seen as the more viable.

Getting to the heart of the feasible structure, participants suggested an initial period of volunteering by all, to then formalise the network and through fundraising better structure the governance team when it will also be possible to pay it.

Furthermore, an agreement is needed, a basis of common standpoints within which those taking part in the network subscribe. How does one join this network? Perhaps the payment of a fee to join can be helpful? We do not have a definite solution on this. When and if the decision of formalising the community occurs, we will have more elements and information to make a choice.

If the full engagement of members is achieved...

If there is the ambition of turning the network into a brand capable of being spread and of soliciting the entry of others, funds are needed to guarantee economic sustainability. We don't have a definitive solution to this challenge yet. However, through a Social Business Canvas It is possible to start looking for economic funds to spread the OSHub model and implement it more.

4.2.5   Conclusions and key points for the network manifesto

Overall, the following points on which to evolve and improve emerged :

1. The value of people who as individuals join the group, their knowledge and personal network can be a resource for finding solutions to initial and ongoing problems/opportunities, improving the OSHub model and creating impact;

2. It is important to have governance that is capable in an operational network vision and that has the skills to take the objectives further;

3. All network members must be committed to finding the necessary economic resources for sustainability.

4.2.6   Additional comments

— One of the strengths of the network is the heterogeneity of its members, both in terms of territorial and cultural background and in terms of skills and experience.

— The fact that several times the name of Maria Vicente was mentioned as a person at the head of the network gives rise to the idea that the members would like to have a person they trust at the head of the organisation, someone that have the ability to organise, to keep track of different groups of people, to be able to manage different situations, and to have the will to achieve complex objectives of activities in which people come from different places/states.

— It is unclear the legal way in which the network will be formalised, however this can be seen as a step in the development of the organisation.

4.3   Conclusion

Through an overview of the work done, it emerges that those who decided to engage produced stimuli to the conversation, trying to find possible solutions to the problems that emerged.

Certainly, the creation of an online platform in which to meet (already created and operational) proved decisive. At the same time, it is important to understand that those who decided to join the network don't have immediate feedback in terms of results, but decided to engage in order to build something for the future. This can cause dropouts, if we don't come up with a plan soon.

We imagine that over the next few months an agenda will be constructed that will give a timetable for the scheduling of the work; furthermore, by the end of the project we will share the results of the following paragraphs with all the participants.

The content of this chapter has been shared with all the participants at the table to stimulate a co-nversation on the subject and to encourage the creation of the network.

5. Network Sustainability Perspectives

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5.1   State of the art

The network's advantage is certainly given by the heterogeneity of its members, in terms of organi-sation, skills and experience, as well as of the actions that can be implemented due to the different activities that are routinely carried out.

The network's future sustainability perspective is, therefore, valued in relation to several elements, already mentioned, such as:

— characteristics of the members composing the network (territorial and cultural bac-kground, as well as expertise) and functional organisation of network processes;

— definition of main topics in order to identify suitable programmes and intercept dedicated funds (Sustainable Development Goals Agenda 2030, activity category);

— useful channels for the growth and visibility of the network.

Heterogeneity also results from the analysis of the economic sustainability of the individual members, which possess different levels of auto-financing capacity and ability to attract public and private funds, also in relation to the different forms that compose the OSHub partnership.

The search for **targeted public funding** sources is the answer to the need for resources for **individual projects**, and for the future implementation in partnership of individual OS activity lines. This approach is exhaustive for the purpose, but limited only to certain calls and tenders, i.e. those of a predominantly public type and which admit **temporary and purposive forms of association** as formal requirements of the participants.

5.1.1   Resources for activities: classic crowdfunding models

By the same, to provide useful resources for the funding of individual projects, targeted fundraising activities or **classic non-business-oriented crowdfunding models** can be used, such as:

— Donation-based, i.e. a typical donation model, mainly used by non-profit organisations and in this case one selflessly donates one's money in support of a specific cause, receiving – in return – no reward or, at most, symbolic often intangible rewards.

— Reward-based, a reward model, based on the amount you have invested in the campaign you support. Although it is mainly used for products/services, in this crowdfunding model, it is also possible to recognise other types of ,rewards', such as: collaborations or participation in the project, creative experiences or memories and acknowledgements to develop a feeling of active participation and/or responsibility in the donor.

5.1.2   Project resources: new crowdfunding models

New crowdfunding models, on the other hand, aim at continuous, and not temporary, project funding, with a view to programmatic activities and whose outcomes land in capitalisation. Through these new forms of campaigning, it is also possible to test the interest of citizens and public administration, with a view to the eventual creation of an organisation or entity to structure activities in the Open Science themes, through OS approaches. The forms most relevant to the themes are:

— Civic crowdfunding, this is a bottom-up funding modality capable of actively involving citizenship, allowing fundraising through flexible tools, able to foster the development of the territory and communities. This is also because crowdfunding itself is a fundraising system that allows anyone to launch a campaign and anyone to support it. Thus, both individuals and social organisations can initiate civic-based projects that benefit the entire community. Recently, civic crowdfunding is becoming an increasingly useful tool for match-funding projects,

which sell collaboration between public authorities and local communities. Individuals as well as social organisations can implement civic-based projects in order to benefit the whole community.

— Recurring crowdfunding, is a non-stop donation-based or reward-based type of fundraising that has no deadline, unlike normal bottom-up funding campaigns. This is a fundraising method designed for all those projects that need to raise funds in a ‚periodic' and continuous way. Basically, the project has no deadline, no budget and rewards can be included. Each supporter who subscribes to the project automatically renews the donation.

5.2 The design of the European network model

At the same time, the intention of some members to invest in a long-term perspective has emerged. Therefore, the need to analyse the hypothesis of formalising a network, based on an open and direct membership model, through the establishment of a permanent and legally recognised governance organisation.

Regarding sustainability, the latter, in addition to the organisational and functional advantage already analysed, would bring the following benefits:

— **Expansion of opportunities** to participate in public funding calls, otherwise inaccessible due to the formal requirements mentioned above;

— **Greater appeal** for private investors: intercepting and involving Foundations and other possible stakeholders, in fact, entails quite a few criticalities for projects promoted by temporary network forms; these criticalities are also linked to the tax rules governing financial contributions and donations with a character of continuity;

— **Not to disperse the experiences** gained and the outcomes obtained through the projects among several subjects, to create a single curriculum, which will collect the history of activities and expertises, thus strengthening its own identity useful to participate in projects, both as a promoter and as a partner.

5.2.1 Network Organization: "Extended Partnerships"

An innovative model useful for the organisation of OSHubs as part of the Network is that of ‚Extended Partnerships', recently introduced by the Next Generation EU Fund.

‚Extended Partnerships' are diffuse networks envisaged as a new permissible form of collaboration between universities, public research organisations, and other public and private entities engaged in research activities, to be organised ideally in a consortium structure. They are characterised by an interdisciplinary, holistic and problem-solving approach.

The organisational structure of this model is constituted as follows:

— HUB: i.e. the subject responsible for the management and administration of the relationships of the Extended Partnership. It performs management and transversal research support activities. The HUB must be established in a stable, non-temporary form and be an independent legal entity.

— Spoke: i.e. a public entity or private economic operator, involved in the implementation of research and innovation projects. It may involve external subjects defined.

— Affiliates: i.e. private entities and individuals, supporting or participating in Spoke activities, due to their expertise.

The responsible entity operates as a permanent project leader, both in the distribution of public funds deriving from projects presented in partnership, and in the management of relations with the Spokes; the latter, in turn, operate in collaboration with other Spokes and/or with affiliates in carrying out their activities.

This model envisages the HUB as an open legal entity: membership is allowed for either Spokes or affiliates, as it is a private organisation. Regardless of this membership, the HUB operates as a Representative of all Network entities. The resources needed to set up the responsible legal entity therefore come from the founders.

By the crowdfunding campaigns that have already been analysed, it is possible to imagine the raising of the needed funds for the constitution and adhesion to a Network based on the model of extended partnerships, to formalise a single legal entity representing the various ,spokes and affiliates'.

The goal consists in developing a model of extended governance, facilitating the coordination of an inter-institutional and cross-discipline system of co-operation between public and private parties (schools, research organisations, teachers, researchers, businesses, citizens and local authorities), and increasing the latter's involvement.

This network model, applied to individual programmes, has the ambition to help strengthen supply chains at national level and promote their participation in strategic European and global value chains. Hitherto only implemented in research programmes, the heterogeneity of the subjects (spokes and affiliates) of Extended Partnerships makes it possible to imagine a fluid model that can fit into any core theme (such as OS

The adoption of the federation and network form of association is also on the upswing. Some of these are acting as coordinating organisations for individual national entities that share the same objectives as well as the same name. The critical aspect of these latter forms is that the national entities are also being formally constituted, not just the HUB.

5.2.2   Possible forms of governance: associations, foundations

The analysis of the legal form of governance (of the entity in charge) suffers from the problems related to the lack of a single EU regulation on non-profit entities. Associations are certainly the most difficult to circumscribe and clearly define.

More and more frequently, non-profit or limited profit joint-stock companies as well as cooperative societies without a mutual purpose (e.g. the Italian social cooperatives, the French cooperative societies of collective interest and the cooperatives accredited as social enterprises in Belgium) are also recognised in the legal systems of the EU member states. Within these categories, entities that have different legal forms (associations, foundations, companies, cooperatives) coexist, as well as entities that are totally non-profit as well as entities that are only partially non-profit.

A recent study requested by the European Parliament[9] revealed that the most widespread legal forms of non-profit organisations in EU countries are the association and the foundations.

Both the associations and the foundations are operating in a very wide range of sectors. In some co- untries, foundations are often chosen to achieve goals that in other countries are usually pursued by associations. From a legal point of view, however, foundations constitute a more uniform group than associations. Foundations can pursue private purposes or public interest purposes (although they remain private bodies). Foundations are bodies with their own funds to be used at their discretion for projects or activities in the public interest. They are completely autonomous from the public state or other public authorities and are managed by independent boards of directors or trustees.

Waiting for the forthcoming EU reform, each member country adopts its own specific regulations on associations and foundations. It also differs substantially from Member State to Member State, even if there are many common elements.

In order to develop an "Extended Partnerships" model, the foundation seems to be the most suitable legal form for the Network's representative entity, given its independent character and the possibility of attracting public and private resources, as well as distributing them nimbly among the various entities. In this particular case, the type of foundation that might best suit the Network's purpose is the participatory foundation.

5.2.3   Focus: Participatory Foundation

Unlike the other typologies, the participatory foundation is not founded by a single party but is the collaboration of several parties who share the same objectives. It is a ‚hybrid' operational instrument, combining elements typical of the traditional foundation and the association. In short, this type of foundation pursues a non-profit objective with assets at its base to support its costs; the amount of the assets is fixed in the deed of foundation, but in this case, the founders actively participate in the decisions and management of the foundation itself, a method typical of the association. In the case of the foundation, however, the ‚weight' of the participants in the management can be diversified.

The participatory foundation is characterised by two elements: an asset element and a personal element. The former consists of the endowment fund, i.e. the part of the assets that cannot be to- uched, and the management fund, i.e. the part of the assets that can be used to finance activities. The latter may consist of donations, income from the foundation's own activities, public or private grants.

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9   A statute for European cross-border associations and non-profit organisations – European Parliament's Com- mittee on Legal Affairs, May 2021.

The foundation's basic legal model is an extensive one, designed to achieve different goals through the cooperation of public, private and voluntary citizens, who become active elements of the foundation itself. This form of foundation is mostly used to implement projects and initiatives aimed at the welfare of the community, such as social and care activities, cultural, scientific, and voluntary activities. This is a successful form of involving private individuals and channelling resources for public benefit purposes.

In addition, in some Member States the participatory foundation is fully considered to be a tertiary sector entity and, consequently, a social enterprise, allowing for the implementation of models of economic sustainability other than public funds.

The volume of transnational activities carried out by associations and foundations has increased considerably in recent years. The volume of transnational activities performed by associations and foundations has increased considerably in recent years. This is partly due to a growing number of European funding programs that encourage transnational cooperation being accessible to the sector, and also to an increase in the volume of organisations interested in developing their services in other countries.

5.3 European Funds Scenario 2021 – 2027

The identification of key categories (topics) is a prerequisite for the selection of useful public opportunities to finance the resources necessary for the sustainability of the network. This is useful to identify the corresponding strategies of **European funding Programmes encouraging transnational cooperation and of Funds allocated to individual Member States**. Programmes are mainly cyclical, and by regular monitoring and appropriate planning, it is possible to sustain activities, as well as to access some forms of credit and guarantees to support non-profit organisations.

The Open Science actions of the OSHubs, through the OS educational approach, focus on local, relevant challenges related to the **Sustainable Development Goals Agenda 2030** themes; the ones most often addressed are:

— Ensure healthy lives and promote well-being for all at all ages.

— Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.

— Achieve gender equality and empower all women and girls.

— Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss.

— Make cities and human settlements inclusive, safe, resilient and sustainable.

— Strengthen the means of implementation and revitalise the Global Partnership for Sustainable Development.

European funding Programmes and structural funds (allocated and co-funded by the individual Member States) have been selected according to **cross-sectoral activities** (Open Science, OS, Active Citizenship-Youth) and to **the main topics** (Education and Training, Research and Innovation, Social Inclusion, Sustainable Development, Climate Change). **The goals and the mission of the European funding Programmes relevant to the activities of the Network, were selected.**

5.3.1   European funding Programmes

The EU programmes in the identified key categories are:

A. Erasmus[+10]

— Education and training, traineeships, youth exchanges, socio-educational and sports activities:

  — Erasmus+ is the EU Programme in support of education, training, youth and sport. It promotes mobility for learning (formal, non-formal and informal) of individuals and groups, cooperation, quality, inclusion, equity, excellence, creativity and innovation in the fields of training, education, youth participation and sport.

  — Target beneficiaries include: Universities, education and training providers, companies, vocational training providers and organisations, organisations active in training, sport and youth, young people, students, apprentices, adults, sportspeople, their teachers and educators, researchers, and academics.

In particular, for OSHub.Network were identified:

— **Key action 2 "Cooperation between organisations and institutions"**: Actions supported under this key action should contribute significantly to the priorities of the programme, produce positive and lasting effects on the participating organisations, on the political systems in which these actions are framed and on the organisations and individuals directly or indirectly involved in the activities organised. This key action should lead to the development, transfer and/or implementation of innovative practices at organisational, local, regional, national or European level. This key action supports: partnerships for cooperation, including cooperation partnerships and small-scale partnerships; partnerships for excellence, including centers for professional excellence, the Teachers' Academy and the Erasmus Mundus action; partnerships for innovation, including alliances and forward-looking projects; capacity-building projects in the youth field;

— **Key action 3 "Supporting policy development and cooperation"**: provides support for policy cooperation at EU level, thus contributing to the development of new policies, which can trigger modernisation and reforms, at EU and system level, in the fields of education, youth training.

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10   https://erasmus-plus.ec.europa.eu/funding?

Erasmus+ 2021-2027 will provide more opportunities and actions for digital learning and continue the support offered to beneficiaries through support networks and online platforms. It will pay more attention to strategic areas for Europe's knowledge creation and sustainable growth, targeting mobility and cooperation projects in strategic areas (climate change, clean energy, digitisation, artificial intelligence, biosciences, etc.) thus contributing to the development of skills crucial to societal challenges.

B. The European Union's Development Education and Awareness Raising Programme (DEAR)[11]

— Promote active citizenship and critical understanding of sustainable development issues, the interdependent world and the role of people as agents of change.

— The overall objective of the DEAR programme and the call is to achieve a more inclusive society with a developed sense of shared responsibility for local and global sustainable development and global challenges (in particular global inequalities and ecological crises).

— The specific objectives of the call are: more EU citizens, including young people, have a critical understanding of the interdependent world and their role in it and have an interest in taking action for sustainable development; more EU citizens, including young people, are actively engaged in local and global sustainable development; global citizenship education is better integrated into formal and non-formal education in EU Member States.

— **The 4 Actions Lots under the programme** foresee that the proposing actors are in the form of Civil Society Organisations (CSOs) or **Local Authorities**. The experience of the **Network** and the direct relationship with the Local Authorities could lead to a joint project, in which it is envisaged that the Local Authorities will finance the activities of the **OSHubs, especially regarding "Lot 4: Actions focusing on formal, informal and non-formal development education."**

— This action line involves actions focusing on *"development education in the formal education system (such as curriculum development, teacher training, school-based development education programmes, work with parent-teacher associations, etc.). In this case, the actions must be approved by the competent educational authorities".*

C. "Horizon Europe[12] – EU Programme for all areas related to research and innovation

— It is the EU's framework programme for research and innovation, responding to the major challenges of the EU and society. It aims to achieve significant impact on three levels: (scientific, technological/economic, social) by promoting partic

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11   https://dearprogramme.eu

12   https://research-and-innovation.ec.europa.eu/funding/funding-opportunities/funding-programmes-and-open-
      -calls/horizon-europe_en

pation and collaboration in **Research and Innovation** in (and between) Member States. Specifically, one of 5 high impact research and innovation missions in response to major societal challenges named ‚**Climate Change Adaptation and Societal Transformation' was identified for OSHub.Network.**

— Important elements of the programme for the Network are:

— Focus on finding targeted solutions to **societal challenges and citizens' needs**;

— A simplified approach to European partnerships and funds organisation;

— Extensive possibilities for international partnerships;

— Policy of promoting ‚**Open Science'**;

— Synergies with other EU programmes and policies to increase the **impact of research and innovation**.

— Rewarding element, moreover, in the evaluation of project proposals proven experience of the network in Open Science practices.

D. L'Instrument Financier pour l'Environnement (LIFE)[13]- Solutions to major environmental and climate challenges

— The LIFE programme was created to support the achievement of the objectives of the Union's **environmental legislation and policies**, from different perspectives: nature, biodiversity, climate action and energy transition/efficiency. The programme aims to support the efforts of operators with projects to:

— Achieve the transition to a sustainable, circular, energy efficient, renewable energy based, climate neutral and resilient economy;

— Protect, restore and improve the quality of the environment, including air, water and soil;

— Halt and reverse the loss of biodiversity and reverse the degradation of ecosystems; – More specifically, in coherence with sustainable development issues addressed through the actions of the OSHubs, the following programme goals, among others, are highlighted;

— Develop and promote innovative techniques and approaches and the dissemination of knowledge and good practices, including through the support of the Natura 2000 network;

— Improve governance at all levels, in particular by improving the capacities of public and private actors and the involvement of civil society.

— The target actors of LIFE are: **National and local authorities, private companies and organisations, bodies, associations, NGOs, universities and research centres.**

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13   https://cinea.ec.europa.eu/funding-opportunities_en

E. InvestEU[14] – Raising of public and private financing (loans, guarantees and other instruments)

— Programme useful to find **credit lines and financial instruments for the establishment and/or management of already structured social purpose entities as well**. EU assistance **can add value in particular** when a project is not attractive to private investment because **it is a public goods project** (produces benefits only in the long term, or benefits that cannot be acquired by private agents) and/or has a high level of risk because it is cross-border in nature or operates in sectors or areas considered to be at risk.

— The most typical areas where InvestEU is involved are innovation, digitisation, efficient use of resources, infrastructure and skills upgrading. Projects funded by InvestEU are expected to have a significant impact in terms of:

— competitiveness, research, innovation and digitisation;

— employment and growth, social development and environmental and climate sustainability;

— social resilience, inclusivity and innovation;

— promotion of scientific and technological progress, culture, education and training;

— promotion of economic, social and territorial cohesion.

— **Among the four main areas of interest for the OSHub.Network are**: research, innovation and digitalisation; social investment, investment in skills and expertise (in itself and to promote the strengthening of the social investment market and microfinance/social enterprise finance).

5.3.2   The Structural Funds

Structural Funds, allocated and co-financed by individual Member States and, for some, by the Cohesion Fund, include: *European Social Fund+ (ESF+)* – Human capital, employment, skills, retraining and social inclusivity.

The ESF+ aims to address one of the **EU's key challenges**, i.e. to achieve a more social and inclusive Europe, as set out in the European Pillar of Social Rights, by complementing Member States' own competence in the areas of **employment, social affairs, education and skills enhancement**.

More specifically, targets and objectives of the ESF+ are co-financed by national budgets.

In particular, the following thematic areas and specific objectives have been selected for the Network:

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14   https://www.investeurope.eu/about-private-equity/for-entrepreneurs/

— Thematic Area 2: Education, Training and Skills; Specific Objectives: to improve the quality, inclusiveness, effectiveness and labour market relevance of education and training; to promote quality access, equity and full inclusiveness of education, training and learning systems, in particular for disadvantaged groups at different stages of life.

— Thematic Area 3: Social inclusion and protection; Specific Objective: to promote active social inclusion, equal opportunities, non-discrimination, active participation and employability.

5.4   Conclusions

The continuity of OSHub's activities depends on future sustainability. In the current state of the art, temporary and purposive collaboration enables resources to be obtained through fundraising campaigns (e.g. classic crowdfunding), or limited participation in calls for temporary associations aiming at financing lines of activity.

With a view to establishing a structured network of community OSHubs, not a temporary one, the needs arise to:

— find an open, purposive and sustainable organisational model;
— find the funds useful for the organisation's long-term projects, as well as for management needs.

The new crowdfunding models, oriented towards public-private co-design for projects without a deadline, can be useful for individual community OSHubs both to raise the funds necessary for the formal establishment of a participatory governance model and to acquire feedback from communities on the creation of the OSHub.Network, as well as to increase visibility.

Considering the subjective and objective elements of the network, and the criticalities highlighted, a new European model of consortium organisation was analyzed, ‚Extended Partnerships' (HUB & Spoke), created for the functional (at 3 different levels) and participatory management of heterogeneous subjects, operating in the field of European research. Among the legal forms analysed for the establishment of the responsible entity (associations, cooperatives and foundations), a focus was dedicated to the new hybrid model of the "participatory foundation", which combines the advantages of foundations and the active and personal participation of associations; it is an innovative model and, to date, regulated in a hybrid form: this allows the participatory foundation to act as a social enterprise in some Member States, an issue to be taken into consideration in order to hypothesise a future form of "revenue" for the Network.

Through a formal legal entity operating as a ‚permanent leader', it is possible both to attract private funding and to consciously plan participation in EU and indirect funds, the cyclical nature of which allows for an organised and programmatic timetable. The funds considered to be useful for the planning of participation have been identified and broken down into programmes, objectives and missions. This analysis and selection was carried out in relation to both the sustainable development themes dealt with in the projects of the various Hubs, the cross-sectoral activities implemented (OS, Open Science) and the Funds useful for finding guarantees and financial instruments to support the management of the OSHub network as a non-profit legal entity.

Annex
Annex 1 _ Ecsite 2022 Pre-Conference Workshop, 1 June 2022 Programme

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Dissemination Strategy