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EOSC DIH SUSTAINABILITY ANALYSIS

Introduction

The European Open Science Cloud¹ Digital Innovation Hub (EOSC DIH)² is an international, multi-partner cooperation that supports private sector organisations to easily access the digital technologies and services offered by the EOSC. The EOSC DIH acts as a one-stop-shop for these organisations to access the resources and expertise needed to develop innovative solutions and services that leverage the power of open science. By participating in the DIH community, these organisations can tap into a vast network of resources and expertise, helping them to stay competitive and innovative. The EOSC DIH is an important link in realising the full potential of open science to drive innovation and economic growth in Europe.

Purpose of the Document

As it stands, there is currently no funded action that will support the operation and maintenance of the EOSC DIH beyond the EOSC Future³ project. This document analyses the various operational aspects of the EOSC DIH including its value proposition towards both the private sector and also towards EOSC along with potential revenue models that the EOSC DIH can adapt to support its activities. The document also analyses the wider ecosystem and makes recommendations for improvements in DIH operations.

The data for this documented was collected through a series of workshops,

1. [EOSC DIH Sustainability Workshop #1: Value of the EOSC DIH](#)
2. [EOSC DIH Sustainability Workshop #2: Scaling and Revenue Models](#)
3. [EOSC DIH Sustainability Workshop #3: Operations](#)

The insights from these workshops were augmented through desk research and through discussions with internal and external stakeholders.

EOSC DIH VALUE PROPOSITION

No users are created equal. EOSC and its ecosystem is, at its current stage, geared towards researchers and remains a bit complicated for startups and SMEs to traverse on their own. This is where the biggest value of EOSC DIH lies. Consultancy, support and coordination services provided by the EOSC DIH lowers the entry barriers for this user group. This is a gap in the market which is receiving more attention as similar initiatives are popping up to support other user groups for EOSC, for example the public sector⁴. EOSC DIH in this scenario is an already established brand which has

¹ <https://eosc-portal.eu/>

² <https://eosc-dih.eu/>

³ <https://eoscfuture.eu/>

⁴ https://www.decido-project.eu/wp-content/uploads/2022/10/EOSC-Competence-Centre-for-Public-Authorities_2.pdf

now been operating for more than 5 years and has well established and repeatable processes for managing the interaction.

EOSC DIH offers a joint umbrella of services not just from EOSC but from all EOSC-related projects. So the SMEs and startups get access to a wide range of services from disparate sources through one open call, thereby making the proposition more enticing to them. The other aspect to consider is that some of these SMEs and startups eventually end up onboarding their services and resources in EOSC itself, thereby creating a positive feedback loop. So not only is EOSC DIH a viable exploitation channel for EOSC and its services, it is also a growth engine for EOSC.

Considering the nature of the EOSC DIH, a Multi-sided Value Proposition Canvas (MVPC) is used to further showcase its value towards both the private sector and towards EOSC. This canvas has been proposed by Paul Belleflamme and Nicolas Neysen⁵ to describe the multi-stakeholder relationships for digital platforms. *“Digital platform business models rely on a particular mode of value creation—focused on matchmaking in a multi-sided environment—which highly differs from the traditional vertically integrated models (or ‘value chains’).”* And though not all aspects of the platform apply to EOSC DIH, the matchmaking role that the DIH plays, makes it important to use the MVPC instead of the traditional Value Proposition Canvas. The various sections in MVPC are as follows:

1. The ‘Wants’ section focuses on the emotional drivers that will lead people to join the platform.
2. The ‘Needs’ section covers all the rational drivers that encourage someone to become a participant of the platform.
3. The ‘Experience’ section covers what the users feel and find on the platform.
4. The ‘Benefits and Features’ covers all elements that create value for the users.
5. The ‘Fears’ section includes all kinds of risks that someone would typically associate, consciously or not, to the fact of joining and transacting over the platform.
6. The ‘Trust levers’ represent crucial elements that the platform should put in place to reassure users and allay their fears
7. The ‘Substitutes’ section on the bottom includes all the alternative ways users can find to fulfil their needs, irrespective of whether this involves a third party or not.
8. Finally the ‘Mitigating Actions’ sections highlights actions that the DIH has taken or can take to differentiate itself from the substitutes and maintain its competitive advantages.

Private Sector Organisations	EOSC DIH	EOSC
Wants	Experience	Wants
Customised support and tailored solutions. Support to grow the business. Collaboration opportunities with other organisations.	Technical Support Business Consultancy DIH Community Trainings and webinars	Coordinating the access of resources by the private sector. Consultancy and support towards the private sector. User database for feedback

⁵ https://www.researchgate.net/publication/348399118_A_Multisided_Value_Proposition_Canvas_for_Online_Platforms

Training and educational resources to upskill the workforce.		collection.						
Needs	Benefits and Features	Needs						
Access to trusted technology and resources to grow. Funding and investments. Mitigate risk with innovation and technology adoption. Expand and scale their business. Quick and cheap design cycles.	Matchmaking service to connect private organisations with relevant EOSC providers depending on their requirements. Dissemination and support in accessing funding opportunities. Enables Test before Invest. Support for onboarding services of the private organisations in EOSC. Support for pilot development and continued technical consultancy. Sector agnostic allowing for cross-pollination.	To grow its user base. To develop an intuitive and user friendly platform. To grow its resource portfolio. Accelerate the creation of new knowledge and spur innovation. Enable storing, managing, analysing and re-using research data.						
Fears	Trust Levers	Fears						
Investing time and resources into utilising EOSC resources and not seeing a return on investment	Feedback mechanisms. Community Building Success stories.	Not being able to effectively serve and meet the needs of the private sector. Fear of not being able to attract and retain a diverse range of users to the EOSC ecosystem. Fear of not being able to effectively scale the EOSC ecosystem to accommodate growing demand.						
Substitutes	Mitigating Actions	Substitutes						
Direct Access of EOSC resources EDIH/Other DIHs Commercial Providers	<table border="1"> <tr> <td>Threat: Mid Added layer of consultancy and value added services on top of EOSC services.</td> <td>Threat: Low EOSC DIH is Europe wide and sector agnostic allowing for a much wider user base.</td> </tr> <tr> <td>EOSC DIH is Europe wide and sector agnostic.</td> <td>EOSC DIH has been connected with the EOSC ecosystem for more than 6 years and has enormous amounts of know-how required to navigate this environment.</td> </tr> <tr> <td>EOSC DIH offers an assortment of various kinds of services under one umbrella.</td> <td></td> </tr> </table>	Threat: Mid Added layer of consultancy and value added services on top of EOSC services.	Threat: Low EOSC DIH is Europe wide and sector agnostic allowing for a much wider user base.	EOSC DIH is Europe wide and sector agnostic.	EOSC DIH has been connected with the EOSC ecosystem for more than 6 years and has enormous amounts of know-how required to navigate this environment.	EOSC DIH offers an assortment of various kinds of services under one umbrella.		EDIH/Other DIHs
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EOSC DIH offers an assortment of various kinds of services under one umbrella.								

Competition

As mentioned in the MVPC above, EDIH and other regional/organisation DIHs pose the biggest competition to EOSC DIH. Recent years have seen a significant rise of regional DIHs, eDIHs and institutional DIHs (referred as local DIHs). These local DIHs provide or aim to provide similar services and have a similar value proposition with a focus on digitalisation rather than on open science.

Specifically, collectively, the EDIHs have a much larger reach, scope and budget than the EOSC DIH, however individually they often target only a small geographical region and/or a specific industry segment. So they lack the interdisciplinarity of EOSC DIH. They also do not have EOSC as their main focus and may themselves need the support and consultancy to navigate EOSC.

So even though EOSC DIH and EDIHs will compete for resources, there are areas where complementary synergies can be found and developed. EDIHs can help EOSC DIH in reaching a more local pool of organisations while the EOSC DIH can provide access to resources from across Europe while also facilitating networking and knowledge sharing through its wider community.

EOSC DIH OPERATIONAL MODELS

The EOSC DIH currently offers to its pilots and community members the following services:

1. **Technical Resources:** The DIH offers Compute (HTC, HPC, Cloud), Storage (Online/Archive), Data Management, Open Research Data and other Tools & Applications through EOSC.
2. **Piloting and Co-design:** The DIH guides pilots in the process of gathering requirements, definition of the architecture, identification and selection of technical services and their technical integration. It provides the pilots with an Environment to Experiment.
3. **Training and Consultancy:** This includes training on digital skills, digital business and support for commercialization. The DIH also provides brokerage to Funding & Opportunities
4. **Visibility:** Finally the DIH offers media exposure as well as visibility at international conferences and events along with Community for sharing best practices.

Operational Activities

To enable this provision of services, the DIH operations is split into following activities:

1. **General Management:** This includes the general management of the DIH including meetings between partners, reporting to the funding projects and establishing partnerships.
2. **Pilot Campaigns and Evaluations:** This includes the management of the campaigns for attracting pilots along with the evaluation of the applications.
3. **Onboarding and Managing Pilots:** This includes the onboarding of the selected pilots and their ongoing management. This also includes the organisation of DIH community meetings.
4. **Technical Support:** This includes technical assessment of the pilots, resource provisioning and providing technical support as required.

5. Monitoring and Evaluation: This includes the monitoring and evaluation of both the performance of the DIH and as well as the individual pilots.
6. Communication and Dissemination: This includes all things related to the promotion be that may of Pilot Campaigns, Events as well as individual pilots and success stories.
7. Business Consultancy and Training: Finally this activity covers arranging training, ad-hoc business consultancy and support for funding opportunities.

Potential Operational Models

Through the workshops and discussion the following operational models have been identified for the DIH:

Matchmaking

This is the current core operational model of the DIH. This is where the DIH runs the pilot campaigns, evaluates pilots, connects them to EOSC and provides technical and business support. Through this model, the DIH acts as a single entry point for the private sector towards EOSC. This is the model for which the DIH has well established processes and has years of experience in implementing. The DIH can exploit its existing community of startups, spin-offs, SMEs, providers and other collaborations to continue to deliver value.

However, this model is also the most difficult to scale up (in this case scaling up refers to increasing the number of pilots supported). In current mode, the amount of effort required scales up almost linearly with every pilot. The effort required may be reduced with some optimisation of the activities and the team has identified bottlenecks and will make recommendations for improvements in the next section.

Matchmaking Plus

This is an extension of the earlier model where the DIH extends its network and consultancy services towards EC funded projects instead of just to the private sector. Just with EOSC projects in consideration the approach towards innovation management and exploitation can be wildly different depending on the consortium. There may be a need to adopt a singular approach to ensure consistent management of innovation which can smoothen the procurement activities. There is also often a need for business modelling in the projects, the expertise for which may be lacking in the project partners. The DIH can leverage both its internal expertise and also the private sector organisations in its community to fill these needs or gaps.

The advantages and disadvantages of the Matchmaking model apply to this one as well. However, this added offering towards the project opens an additional source of revenue for the DIH which can then be maintained while continuing to contribute towards the growth of the private sector in Europe. It does with an added disadvantage of having to find project(s) willing to take on DIH to provide these services.

Community Management or Matchmaking Light

This model tries to solve the scaling up problem by trying to offload certain activities from the current operations to the EOSC projects. In this model, the DIH focuses on running the campaigns, evaluating

the pilots and managing the community while providing the business consultancy and training. Communication, Dissemination, Technical Support and Monitoring of the pilots are covered by the projects.

This will significantly reduce the workload requirements for sustaining the EOSC DIH and hence represents the easiest model to scale up significantly. It, however, does mean that the central coordination provided by the EOSC DIH is lost and the pilots will have to face a significant burden to work with processes of each individual project.

Business Lab

This represents a significant evolution in the DIH mode of operations as compared to the previous models. In this model, the DIH acts as a Business Lab, sort of an incubator to support startups, SMEs and even large corporations in developing new products and services. Leveraging the open resources available from EOSC combined with the expertise, the DIH can provide a testbed for experimentation at an extremely low cost. The businesses can perform the experimentation themselves in the lab or the DIH can act as an external lab to the business and manage the entire development process.

This is an attractive operations model as it represents the best possibility for a self-sustaining DIH while maintaining its original mission of supporting the private sector to exploit EOSC resources. The DIH can play an interesting role to spur the growth of industry in Europe. However, this radicality comes at the cost of having to establish a separate legal entity for the DIH. It is also an untested model at this moment with lots of uncertainties and unknowns.

EOSC DIH REVENUE STREAMS

A small role in a Horizon Europe(HE) project

This has been the staple for managing the EOSC DIH operations in the past few years. During its inception in the EOSC Hub project and its continued operation during the EOSC Future project, the DIH activities were supported through a specific Task in the project. And during both these projects, the DIH operations have been supported by a single project alone. This can be expanded so that DIH plays a similar role in multiple projects at the same time to scale up its activities and to diversify its activities.

However this diversification will come at an additional cost of fragmentation of effort, increased need for coordinating activities across projects and dealing with varying reporting requirements and timelines of different projects. This also means that the revenue stream for the EOSC DIH is uncertain as its operations may not be part of the priorities set by the funding organisation, meaning there would be no incentive for projects to include the DIH within their workplan.

Dedicated CSA project

An alternative to the role in HE project will be to have a dedicated Coordination and support action (CSA) for supporting the activities of the DIH. This ensures that there is sufficient funding for maintaining the operations in the near term future. It will also make it easier for the EOSC DIH to set

up collaboration activities with relevant projects in the EOSC ecosystem. Overall, a dedicated CSA can provide crucial funding, collaboration opportunities, and policy support for the EOSC DIH.

However, participating in a CSA may require the DIH to align its activities with the objectives and priorities set by the funding organisation. This could limit the DIH's autonomy in decision-making and hinder its flexibility in responding to evolving user needs and market dynamics. Relying on a CSA for funding means that the EOSC DIH's financial stability is tied to external sources. If the CSA funding is reduced or terminated in the future, it may impact the DIH's sustainability and ability to continue its operations.

Procurement

Procurement could be a potential way of sustaining the DIH operations. Much similar to the EOSC Core and Horizontal services, EOSC DIH could be a service that is supported through a Procurement action. This will ensure sustainability over a long period of time while providing policy support, autonomy in decision making and flexibility (for the procurement winner).

However, the key barrier to this way of sustaining the DIH is that unlike the core and horizontal services which are IT based, the DIH is mainly a 'know-how' based. This would make it extremely difficult to handover and transition smoothly to the next operator without significant investment upfront.

Funded by the Private Sector

Pilot Costs

One approach for funding the EOSC DIH is to have startups and SMEs themselves pay for running pilots with the DIH. This model of user-funded pilots offers several advantages. Firstly, it allows the DIH to generate revenue directly from the users who benefit from its services, creating a sustainable funding source. Secondly, startups and SMEs have a vested interest in the success of their pilots, which can lead to a more focused and committed engagement with the DIH. Additionally, user-funded pilots can provide valuable feedback and real-world use cases, allowing the DIH to improve its offerings and tailor its services to better meet the needs of its target audience.

However, there are some barriers and disadvantages to consider. One potential barrier is the financial capacity of startups and SMEs, as they may have limited resources and budgets for engaging in paid pilots. This could pose a challenge in terms of affordability and accessibility for certain user groups. Moreover, startups and SMEs may be hesitant to invest in pilot projects if they perceive the risks to be high or the potential benefits uncertain. This can slow down the adoption and uptake of the DIH's services. Additionally, the DIH must ensure that the pricing structure and payment models are fair, transparent, and aligned with the value provided to the startups and SMEs, to maintain trust and attract participation. These barriers can be somewhat overcome by offering flexible pricing options, such as tiered payment plans or subsidies for early-stage startups or economically disadvantaged SMEs.

Structuring the payment for pilots in the case of the EOSC DIH can be done in various ways, depending on the specific context and objectives of the pilots. Some potential approaches could be,

- **Fixed Fee Model:** This model involves setting a fixed fee for the pilot project based on the scope, duration, and complexity of the engagement. The fee can be determined by considering factors such as the number of resources provided by the DIH, the level of technical support required, and the expected outcomes.
- **Usage-based Model:** This model charges the startups and SMEs based on the actual usage of the DIH's resources and services during the pilot. For example, the DIH can charge based on the number of hours of technical support, data storage capacity utilised, or similar usage numbers.
- **Tiered Pricing Model:** This model offers different pricing tiers with varying levels of services and benefits. Startups and SMEs can choose a tier that aligns with their specific needs and budget. Each tier can have a fixed fee or usage-based pricing structure.
- **Subsidised or Grant-funded Model:** In some cases, the DIH may offer subsidised pricing or grants for specific target groups or innovative projects. This approach can support early-stage startups, socially impactful initiatives, or projects aligned with specific research domains or policy priorities.

Freemium Model

The EOSC DIH can adopt a Freemium model, offering a set amount of technical set of services and resources for free to startups and SMEs while charging for support or for additional services. This approach has several advantages. Firstly, it facilitates user acquisition by attracting a larger user base and fostering a strong community of startups and SMEs. Secondly, the Freemium model provides opportunities for upselling premium features and advanced services to users who require more capabilities or additional support. This helps generate revenue while catering to diverse user needs. Additionally, the model enables easy scalability as the EOSC DIH can accommodate a large number of users without significant incremental costs. Free users also provide valuable feedback, allowing the DIH to improve and enhance its offerings based on user preferences. Lastly, the network effect comes into play, where the increasing number of startups and SMEs on the platform enhances its value, attracting even more users. However, there are some challenges to consider. Converting free users into paying customers can be a hurdle, and finding the right balance between offering compelling free services and generating revenue from premium users is crucial. Managing resource allocation and ensuring a positive value perception for both free and premium services are also important considerations. By addressing these challenges and implementing effective conversion tactics, the EOSC DIH can leverage the Freemium model to attract users, generate revenue, and create a thriving ecosystem of startups and SMEs.

Membership fees

Membership fees can be a very important revenue stream for EOSC DIH and are meant to be charged to organisations that have access to the services and expertise of the EOSC DIH under a “member participation” status.

Membership fees can be structured in various ways, such as monthly, quarterly, or annual payments. The fees can be fixed or variable, i.e. a flat fee or a percentage of revenue. Additionally, there can be a tiered pricing structure based on the level of membership and/or service provided. Lastly,

membership fees can vary widely depending on the nature (e.g. public or private sector) and/or size (e.g. startup, SME or large corporation) of the organisation receiving the services.

Based on information from various DIHs, typical membership fees can range from a few hundred euros to several thousand euros per year. As an example, the Aachen Digital Innovation Hub ([Homepage - digitalHUB Aachen](#)) charges an annual membership fee ranging from 600 euro for the basic service package for startups (or even 0 € for early stage startups) up to €50,000 for the full-scale service package for large enterprises.

In a similar manner to other DIHs, EOSC DIH could offer different types of memberships (e.g. “standard”, “premium”, “elite” etc.) with varying levels of access to services and facilities. As an example, basic membership may include only access to online resources and events, while premium membership may provide access to funding, dedicated consultancy services and privileged support for EOSC services.

The following table provides an indicative membership fee structure for EOSC DIH:

EOSC DIH annual membership fee	STANDARD membership					PREMIUM membership	ELITE membership
	1-9 HCs	10-49 HCs	50-249 HCs	250-999 HCs	1000+ HCs		
Company size	1-9 HCs	10-49 HCs	50-249 HCs	250-999 HCs	1000+ HCs	All sizes	All sizes
Companies fee	1.000 €	2.500 €	5.000 €	7.500 €	10.000 €	15.000 €	20.000 €
Startups fee (<5yrs old)	250 €					500 €	1.000 €

Eventually, the levels and mixture of membership tiers, company sizes and service packages, for the case of EOSC DIH will be finalised based on:

1. the **market intelligence** that EOSC DIH has about its prospective customers e.g. client mixture, typical client, etc,
2. its **business plan**, including operational costs’ baseline (e.g. minimum annual costs to sustain a core EOSC DIH team of 3 FTEs), alternative long-term revenue streams that are secured (e.g. public funding via European projects),
3. its **strategic roadmap**, particularly its legal form (e.g. becoming a separate legal entity), its for-profit or non-for-profit status, the wider EOSC ecosystem developments (e.g. EOSC Association), and other related aspects.

Equity vs. Success fee

An alternative (and complementary) revenue stream, that has limited short-term yield but potentially significant long-term gains, is to associate the EOSC DIH support offered to startups with some sort of return-of-investment (ROI) metric, usually some form of capital raising from private investors. This way, EOSC DIH becomes a “partner” with its clients, in a win-win framework, where the success of the company benefiting from the EOSC DIH services will return to EOSC DIH in a pro rata manner.

There are two main ways to achieve this form of revenue stream:

- **Acquiring equity:** this involves obtaining a share of the company, typically in the form of company stock. EOSC DIH could acquire equity in a company either in exchange for the services it offers and/or in exchange for providing financing in the form of investment (either directly or through a dedicated investment arm e.g. a VC fund).

The percentage of equity to be taken varies, starting as low as 2-3% and going up to 9-10% or higher (particularly if investment or other forms of financing is provided). However, obtaining a percentage of a company can be a complex and risky process that requires consulting with legal and financial experts before pursuing such arrangements, something that does not seem easily accessible in the case of EOSC DIH for the foreseeable future.

Furthermore, most startups would be reluctant to offer equity if no direct investment is involved, while more mature SMEs and larger companies are unlikely to consider such an option in the context of the services offered by EOSC DIH.

The best option would be for EOSC DIH to establish a strategic partnership and pursue this activity in collaboration with an external dedicated investment arm that would carry out the respective arraignments. There are several organisations in Europe with an investment interest in the technology sectors where EOSC DIH has a competitive advantage (e.g. Big data, AI, etc) so this is a path worth exploring.

- **Success fee:** this involves establishing a Success Fee agreement between the EOSC DIH and the company, typically in the form of a bilateral agreement with the scope of achieving a certain milestone for the benefit of the company i.e. funding, which in turn will trigger an event of giving back to the EOSC DIH a portion of this financial gain.

Such an agreement should be established prior to the company receiving EOSC DIH services and should remain in force for at least 12 months after the service delivery has been completed, so that to cover any investment-raising activities being finalised after the EOSC DIH support.

The percentage of success fee can be a fixed number applying horizontally, or a variable number depending on the level of funding raised. The latter is a fairer method (and more acceptable by companies) hence it is recommended that EOSC DIH goes with this option.

An indicative success fee table follows below:

Amount of capital raised	Success Fee
Up to one million euro (1.000.000,00 €)	7%
One million euro and one cent (1.000.000,01 €) up to two million euro (2.000,000,00 €)	6%
Two million euro and one cent (2.000.000,01 €) up to three million euro (3.000,000,00 €)	5%
Three million euro and one cent (3.000.000,01 €) up to four million euro (4.000,000,00 €)	4%
Four million euro and one cent (4.000.000,01 €) and above	3%

Eventually, the ranges of capital raised and the corresponding success fee percentages, are recommended to be finalised, not only according to internal EOSC DIH business plan calculations, but also based on the feedback from actual pilots with which the EOSC DIH has established collaborations, via data collected from e.g. satisfaction surveys or dedicated focus groups.

Sponsorships

Sponsorships can be another important revenue stream for EOSC DIH. Effectively sponsorship involves partnering with companies or other organisations that are willing to provide (direct or indirect) financial support in exchange for marketing opportunities and brand exposure; in this respect, it is vital that EOSC DIH capitalises in the best possible way upon the EOSC brand.

In terms of sponsor target groups, typical examples could be major ICT corporations, having a strategic (i.e. business) interest in the EOSC sector and ecosystem and its industry-engagement activities. Another interesting target group would be large Financial institutions with a CSR/marketing interest to support European SMEs and startups.

In terms of sponsorship types, the most straightforward one is to provide financial support directly to the DIH managing organisation which can then allocate it to support its operations as it best sees fit. Typically, there would be different sponsorship levels or tiers (in similar fashion to the membership tiers), such as:

- **Gold sponsor:** this tier could include prominent branding on the EOSC DIH website and marketing materials, as well as exclusive access to EOSC DIH events and workshops. This tier could also include opportunities for the sponsor to participate in an EOSC DIH Advisory or Industry Board and thus advise on the EOSC DIH's strategic direction. A price for becoming a Gold sponsor could range from **€25,000 up to €50,000 annually**.
- **Silver sponsor:** this tier could include branding on the EOSC DIH website and marketing materials, as well as access to EOSC DIH events and workshops. This tier could also include some opportunities for the sponsor to participate in EOSC DIH working groups and provide

feedback on specific initiatives. The price for this tier could range from **€10,000 to €25,000 annually**.

- **Bronze sponsor:** this tier could include basic branding on the EOSC DIH website and marketing materials, as well as access to some EOSC DIH events and workshops. The price for this tier could range from **€5,000 to €10,000 annually**.

Another approach is for the sponsor to provide financial support, on a case-by-case basis (vs. a set time duration (e.g. yearly) mentioned above) for specific EOSC DIH activities (vs. generic EOSC DIH operations mentioned above), such as:

- **Event Sponsor:** such sponsors can provide financial support to help organise EOSC DIH events like conferences, workshops, and hackathons, thus helping the EOSC DIH to cover the costs (partially or in full) for organising such events.
- **Pilot Sponsor:** such sponsors can provide financial support to help the implementation of a specific Pilot that EOSC DIH is running, in exchange for exposure to the participating startup/SME of this pilot.

Besides sponsorship in cash, there can be many forms of in-kind sponsorship. For example, EOSC DIH could partner with:

- **Technology companies:** offering access to specialised software, apps, equipment or tools for prototyping and testing for the EOSC DIH users.
- **Universities:** offering training and educational programs tailored to the EOSC DIH users.
- **Incubators and Accelerators:** offering office space or mentorship to the startups and SMEs supported by the EOSC DIH.
- **Marketing agencies:** offering branding and advertising guidance to EOSC DIH users.
- **Consulting firms:** offering strategic coaching and business advisory to the companies supported by EOSC DIH.

Sponsorships can be a mutually beneficial arrangement for both EOSC DIH and the sponsor. EOSC DIH can secure vital funding or in-kind resources to support its operations, while the sponsor can gain exposure to a targeted audience, reach potential customers within the EOSC DIH network, or demonstrate its social commitment in supporting European startups and innovative SMEs. Nonetheless, it is important for EOSC DIH to carefully select its sponsors to ensure that the partnerships align with its long-term strategy and objectives.

ESTABLISHING A SEPARATE LEGAL ENTITY

Funding by the Private sector or attracting sponsorship requires that the EOSC DIH Management is "spun out". This can impact both its sustainability prospects -by attracting more easily sponsorships and having a more streamlined balance sheet and budget control- as well as its scaling up efforts -by maintain a more flexible and lean operational and organisational model.

Selecting the most appropriate legal form for such a spin-off would depend on a variety of factors, including strategic and business plan aspects. Main legal form alternatives for EOSC DIH can include the following:

Non-profit organisation: A non-profit organisation could be a suitable legal form for the EOSC DIH should its primary objective remain strictly in promoting research and innovation and accelerating industry take-up in the field of open science, rather than generating profits for its owners or shareholders. This legal form could potentially allow the EOSC DIH to apply for tax-exempt status and to access funding from public and private sources.

Public-private partnership: A public-private partnership (PPP) could be a suitable legal form for the EOSC DIH if it aims to move forward together with a wide range of stakeholders from the public and private sectors as opposed to its current status. This legal form could enable the EOSC DIH to access funding and expertise from both the public and private sectors, while also allowing for greater flexibility and innovation than a purely public or private organisation.

Limited liability company: A limited liability company (LLC) could be a suitable legal form for the EOSC DIH if its primary objective is to generate revenue (and eventually profits) through its activities. This legal form could provide the EOSC DIH with greater flexibility and autonomy than a non-profit organisation, while also limiting the liability of its owners or shareholders.

The above (and other) options are driven mainly by its business model (to be documented in an EOSC DIH's business plan / strategy roadmap) before the most suitable legal form can be selected.

One thing for certain is that, depending on its business model and respective legal form, a quite different set of Key Performance Indicators (KPIs) would have to be selected for its Monitoring and Evaluation (M&E) processes, compared to what have been currently identified and deployed as part of its project status within the EOSC Future context. Specifically, some more business/operational KPIs that would help track sustainability aspects, could include the following:

- **Revenue generated:** tracking the revenue generated from different services -such as membership fees, sponsorships, consulting services and training- is important in order to help the EOSC DIH to gradually optimise its pricing strategy (e.g. value-based vs. cost-plus vs. competitive vs. freemium vs. membership pricing) and identify further areas for growth. This is an important KPI for the financial sustainability of the EOSC DIH.
- **Time-to-market for new products or services:** tracking the time-to-market for new products or services that EOSC DIH has helped to develop for its clients can help to identify areas for process improvement and ensure that EOSC DIH is providing efficient and effective services. This is an important indicator of the EOSC DIH's ability to promote innovation and commercialization in the field of open science.
- **Number of patents or publications:** tracking the number of patents or publications that result from pilots or other collaborations/projects that EOSC DIH's clients have worked on can help to demonstrate EOSC DIH impact on innovation and research outcomes. This is an important indicator of the scientific and technological impact of the EOSC DIH's activities.

- **Readiness Levels expansion:** thus far, among various readiness levels, only Technology Readiness Level (TRL) is being monitored by EOSC DIH for the supported pilots. It is recommended to expand this to address other Readiness Levels e.g. the [KTH Innovation Readiness Level](#) model, such as: Customer Readiness Level (the maturity level for market demand and customer interest for the project/product), Business Readiness Level (the maturity level of the economic viability and feasibility of the project/product's revenue model and scalability), Intellectual property Readiness Level (the readiness level of the intellectual property status and related protection), Funding Readiness Level (the readiness level for securing the necessary funding to bring the project/product to market) and Human resource Readiness Level (the maturity level of the SME team's skills and alignment).

Of course, existing KPIs in the current M&E framework, such as **Number of pilots served, Pilot satisfaction ratings, Number of Collaborations and Partnerships**, and others, should continue to be tracked in any of the above scenarios.

SCALING UP THE DIH

Scaling up for EOSC DIH means either supporting more pilots or offering more consultancy services (and not EOSC service). Considering the goals of EOSC and EOSC DIH, scaling up would make sense in terms of offering pilots. In its current form EOSC DIH with its customised consultancy for each startup and SMEs cannot scale unlimitedly.

Bottlenecks

Intellectual Property Issues

As mentioned earlier, the Intellectual Property (IP) associated with the DIH is quite predominantly 'know-how' based. However, it does have other forms of IP assets like,

1. **Branding and Trademarks:** This includes the brand identity of the DIH include logo, typography, website design and other marketing materials developed over the course of its existence. Currently there are no formal rights associated with these components.
2. **Data and Databases:** The DIH has over the years developed a significant database of private sector contacts, technical experts and trainers. This is currently not shared beyond the task partners, however no specific rights are associated with these assets.
3. **Documentation and Reports:** This includes the various deliverables, presentations and reports that the DIH has generated. Most of this is publicly available and has a copyright associated with it.
4. **Know-how:** There is an enormous amount of know-how associated with the DIH that resides with the various partners related to the operations of the DIH. While these are not formally protected by IP rights, no steps have been taken to safeguard these through NDAs or other contractual measures to maintain their confidentiality and exclusive use.

The biggest concern herein lies for the future operations of the EOSC DIH is the fact that there currently exists no agreement on the ownership rights of the various components of the DIH and/or the DIH as a whole. This quite severely limits the options available in terms of revenue streams for the DIH to secure its future.

Governance

Related to the ownership is the question of governance. Since legal ownership exists, there is no framework for decision making for the EOSC DIH. Terms of reference for the operation of the DIH had been developed during the EOSC Hub project but were never formally adopted and signed by the partners.

FUTURE ACTIONS

Branding

The branding of the EOSC DIH should evolve to better align with its target audience, which consists of startups and SMEs in the private sector. Currently, the branding is a bit more focused on researchers and universities, which can create a disconnect and hinder the DIH's ability to attract and engage the desired user base. To address this, the branding should be updated to reflect the DIH's value proposition for startups and SMEs. This includes emphasising the customised support, training, and access to EOSC resources that the DIH provides, as well as highlighting the benefits and opportunities it offers for innovation, growth, and collaboration in the private sector.

To ensure the branding of EOSC DIH effectively evolves, a thorough analysis of other DIHs' branding strategies provides valuable insights. A quick comparative study reveals that successful DIHs catering to startups and SMEs have adopted a brand identity that emphasises agility, innovation, and industry relevance. They utilise modern and dynamic visual elements, such as clean and minimalist logos, vibrant colour palettes, and contemporary typography, to resonate with their target audience.

Applying these findings to the branding of EOSC DIH, it is crucial to consider the development of a fresh and contemporary visual identity that aligns with the values and objectives of the DIH. This may involve designing a new logo that embodies the essence of digital innovation, collaboration, and growth. The colour palette should be carefully chosen to evoke trust, professionalism, and energy, while also resonating with the target audience. Typography plays a significant role in brand communication. Selecting modern and versatile fonts that are legible across various platforms and devices is essential. The typography should strike a balance between being approachable and professional, reflecting the DIH's commitment to supporting startups and SMEs while maintaining a high level of expertise.

Beyond visual elements, the messaging and positioning of EOSC DIH's brand should be refined to effectively communicate its unique value proposition as discussed earlier. It is crucial to highlight the tangible benefits and outcomes that startups and SMEs can achieve through engagement with the DIH. This can be achieved through the creation of compelling content, such as success stories, testimonials, and case studies that demonstrate the real-world impact and value generated by

collaborating with EOSC DIH. The current website does have this content however, it does fall in communicating its message effectively.

While evolving the branding, it is vital to maintain consistency and alignment with the overall EOSC brand identity to ensure a cohesive and unified image. Collaborative stakeholder consultations and engagement should be an integral part of the rebranding process. This approach allows for valuable insights and feedback, ensuring that the new branding resonates with the target audience and is embraced by the ecosystem.

However, it is important to approach the rebranding process with caution and gradual implementation to avoid confusion and maintain continuity with existing stakeholders. Clear communication and a well-executed transition plan will help manage potential challenges and gain support from both the research community and the private sector.

Marketing

As mentioned earlier, all users are not created equal nor can they be reached in the same way. The DIH's current challenges in attracting SMEs and startups to its open calls and events, and the limited reach of its network, indicate the need for a more comprehensive marketing plan. A robust marketing strategy can help the DIH address these issues and achieve its goals more effectively.

A comprehensive marketing plan for the DIH is essential for achieving the following objectives: increasing awareness of the DIH's services and opportunities among SMEs and startups, broadening the DIH's reach to engage with a wider range of potential collaborators, effectively communicating the DIH's unique value proposition to attract SMEs and startups, building strong relationships through networking events and personalised outreach, and establishing the DIH as a thought leader through content marketing initiatives. By implementing these strategies, the DIH can overcome its current challenges and successfully attract a diverse and expanding network of SMEs and startups.

To develop a comprehensive marketing plan, the DIH should consider incorporating the following recommendations:

1. **Targeted Digital Campaigns:** Utilise digital marketing channels, including search engine optimization (SEO), pay-per-click advertising (PPC), social media advertising, and email marketing, to reach and engage with SMEs and startups effectively. Develop targeted campaigns based on specific industry verticals, geographic regions, or technology domains.
2. **Partner Collaborations:** Forge partnerships with industry associations, incubators, accelerators, and other relevant organisations. This collaboration can involve joint marketing efforts, cross-promotion of events and initiatives, and sharing resources to expand the reach and impact of both parties.
3. **Tailored Content Strategy:** Develop a content strategy that focuses on creating valuable and informative content tailored to the needs and interests of SMEs and startups. This can include blog articles, case studies, video tutorials, and expert interviews. Share this content through various channels to establish thought leadership and attract the target audience.

Standardisation / Automation

EOSC DIH has already developed several standardised processes and procedures for delivering its services to its pilots, yet these can be further improved. This would help to further reduce the time and effort required to deliver services, improve the level of consistency and quality, reduce the need for manual intervention, and make it easier to scale up its operations. Areas where further optimisation and improvements can take place, include indicatively the following:

- Expand knowhow in **project** management, **client** management, and **financial** management **skills**, through respective **training** and **certification** of the EOSC DIH staff.
- Roll out dedicated project management **tools** to automate tasks such as task allocation, progress tracking, and resource management within the EOSC DIH team, helping to keep operations on time and within budget.
- Apply customer relationship management (**CRM**) tools to automate tasks such as client onboarding, communication, and follow-up, helping to ensure that clients receive a high level of service and support.
- Introduce lean **accounting** and **financial** management tools to automate tasks such as invoicing, expense tracking, and financial reporting, helping to reduce errors and ensure that financial records are accurate and up-to-date.
- Adopt new **e-learning** platforms that can facilitate an easier delivery of training and education programs, both synchronous and asynchronous.
- Implement **quality management** systems, such as ISO 9001, to ensure that services are delivered to a consistent standard of quality and help build trust with clients and stakeholders.

Of particular interest would be for EOSC DIH to adopt a standardised method for evaluating the business progress and prospects of the pilots/companies' products, market, competition, teams, risks, and other key areas, as part of its consulting services.

Partnering with other organisations

EOSC DIH can partner with other organisations, such as business-support networks, academic institutions, or even other DIHs, to scale up its reach and service delivery capabilities. Partnering with other organisations can be a valuable tool for EOSC DIH to scale up its operation and access new resources and expertise. In particular, EOSC DIH should focus on the following partnering activities:

- Leveraging existing **business-support networks**, such as industry associations and business-support structures (e.g. business incubators and accelerators) and identifying potential partners and collaborators. These networks can provide general opportunities for networking and knowledge sharing, but of particular interest are the **Mentors** that these networks usually have access to. Accessing external mentors (on a pro bono basis) can help the EOSC DIH to offload its consulting operations and specialised services.
- Partnering with **universities** and other academic institutions to scale up its **training** and **education** offerings. Getting access to readily available training content is significant time and effort saving for EOSC DIH. A by-product of such partnerships is getting the opportunity to

collaborate on research funding projects and initiatives thus adding additional revenue opportunities.

- Entering into joint ventures and strategic alliances with **other DIHs** to combine resources and expertise as well as to pursue shared goals and objectives. This can help to expand the reach and impact of EOSC DIH, and to access new markets and opportunities. Of high value and interest is the fact that other DIHs can increase the **deal-flow** channel of new pilots towards EOSC DIH. However, it is important to ensure that partnerships with other DIHs are structured in a way that is mutually beneficial and sustainable over the long term (i.e. avoiding conflicts of interest). This is best achieved by pursuing partnerships that have already identified specific areas of complementarity between the two DIHs.