Living Lab prototypes

Milestone 3 (MS3) - STARS EU Living Labs prototypes specified

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Introduction

Milestone 3 (MS3) - STARS EU Living Labs prototypes specified

Description:

- 7 Living Lab (Multistakeholder partnership) models (one in each STARS EU priority area)

- Specify the characteristics of at least 7 different STARS EU interregional Living Lab model structures (one per Priority Area), their statuses, membership, typical activities and their resources (M12), within the STARS EU Priority Areas (M12).

Means of Verification: Report describing the 7 Living Lab prototypes, in English

Due Date: M12 – October 2024

Living Lab concept

Living Lab definition

The term "Living Lab" is nowadays frequently used, referring to a wide variety of local experimental projects of participatory nature. A shared definition or common understanding on what a living lab is, though, still lacking. A common definition of a Living Lab approach seems to be far from established. Some definitions in the literature:

- Nowadays a living lab can be referred to as a concept for achieving a long-term sustainable solution for a societal challenge by involving the actual end-user. It can also be a method to achieve a certain objective by connecting and involving the right stakeholders and follow an iterative design and learning cycle called co-creation. Finally, a living lab can also refer to the context, related to the organizational or geographical environment for the real-world experiments (Maas, van den Broek, & Deuten, 2017).

- Living Labs are open innovation, multi-stakeholder, long-term ecosystems for creation, exploration and experimentation of technology-based services (Eriksson [et al.], 2005)

- Living labs are environments for innovation and development, where users are exposed to new ICT solutions in (semi) realistic contexts, as part of medium- or long-term studies targeting evaluation of new ICT solutions and discovery of innovation opportunities (Følstad, 2008).

- A living lab is a user-centric innovation milieu built on everyday practice and research, with and approach that facilitates user influence in an open and distributed innovation

processes engaging all relevant partners in real-life contexts, aiming to create sustainable values (Bergvall-Kåreborn [et al.], 2009).

- Physical regions of virtual realities, or interaction spaces, in which stakeholders from public-private-people partnerships (4Ps) of companies, public agencies, universities, users, and other stakeholders, all collaborating for creation, prototyping, validating and testing of new technologies, services, products, and systems in real-life contexts (Leminen, 2012).

- Living Labs are defined as user-centered, open innovation ecosystems based on a systematic user co-creation approach, integrating research and innovation processes in real life communities and settings (ENoLL, 2015)

- Living Labs are open innovation environments in real-life settings, in which user-driven innovation is fully integrated within the co-creation process of new services, products and societal infrastructures in a regional harmonized context (the "Open Innovation Functional Region") catalyzing the synergy of SMEs Collaborative Networks and Virtual Professional Communities in a Public, Private, People Partnership (Santoro, 2009).

From all these papers, several key elements that are essential for a living lab can be identified (Maas, van den Broek, & Deuten, 2017):

- Experiments take place in a real-world environment. Living Labs are not about testing a new solution in a specifically designed environment, but about real-life experiments on a street or in a neighborhood, city, region or even country.

- Co-creation and end-user involvement is essential for the process of innovation development. This implies a cooperative process where all partners, and especially the end-user, can influence the experiments Co-creation aims at creating an innovative product or solution that is mutually valued and accepted by all partners and, therefore, sustainable on the long-term.

- Involvement of multidisciplinary competences and multi-stakeholder participation, i.e. the of quadruple helix including the representatives of public authorities, knowledge institutes, industry partners and citizens are highly promoted within the living labs. This helps to extend the traditional boundaries of the developed innovations and encourage "out of box" solutions. Multi-method approach combines co-creation methodologies from all the disciplines, selecting the most fitting one

- An iterative learning cycle, referring to the process where innovations are developed following "plan-do-check-act" cycles. The evaluation's results improve the new experimental "plan-do-check-act" loop, allowing for continuous learning and adaptation, interaction between partners, building trust and inspiration for others to learn and innovate.

Living Labs in STARS EU

Living Labs - Challenge incubators for STARS EU

A living lab is a collaborative platform where stakeholders from various sectors such as industry, academia, research, ONG, government and civil society come together to identify needs and opportunities for territorial and inter-territorial cooperation, including academia and industry cooperation, and further on to co-create and test innovative solutions in a real-world setting. By providing a dynamic environment for experimentation and iteration, living labs facilitate the development of user-centered innovations that address complex societal challenges. These platforms foster open innovation, promote interdisciplinary collaboration, and support the integration of new technologies and practices into everyday life. Through a process of co-design, experimentation, and evaluation, living labs enable stakeholders to gain valuable insights, refine their offerings, and accelerate the transition towards more sustainable and inclusive societies.

Why STARS EU need Living Labs

The primary objectives of STARS EU Living Labs are to foster collaboration among diverse stakeholders and drive innovation that addresses pressing societal challenges.

- Identify needs and opportunities from diverse sectors, including industry, private enterprises, public institutions, and social organizations. By actively engaging with stakeholders from these sectors, we aim to gather insights and challenges that can inform research and educational agendas and drive innovation.
- Facilitate Collaboration as Living Labs Bring together the academia (professors, researchers and students) with stakeholders from industry, local government, social sector and the community to collaborate on innovative solutions, either through research and training.
- Address Global Societal Challenges and Sustainable Development Goals. The Living Labs will identify and tackle these challenges namely integrating them with the work being done in the Thematic Interest Groups, through innovative and creativity methodologies, based on interdisciplinary and user-centered approaches, that will be communicated to the curricular development experts and research experts for knowledge and technology development and later transfer.
- Foster inclusive and sustainable regional development through collaborative innovation for societal well-being, contributing to society and regional prosperity.
- Promote Innovation, as the STARS EU Living Labs will encourage the development and testing of novel ideas, and will feed the research centers with the need for applied research towards the development of new products, technologies, and practices that have the potential to create positive impact and transform industries and communities.
- Promote Teaching and Learning Innovation, as the STARS EU Living Labs will encourage the modernization of curriculum and the continuous co-design of new upskill and reskill offers, impacting the employability and lifelong learning perspectives into a more skilled generation.
- Support Economic Development. STARS EU Living Labs will drive economic growth and competitiveness by fostering entrepreneurship, creating new business opportunities, and promoting knowledge and technology transfer.

- Enable Knowledge Exchange, regionally between stakeholders, and internationally within and beyond STARS EU alliance. Facilitate the exchange of knowledge, expertise, and best practices among stakeholders, leading to mutual learning, capacity building, research and economic development.
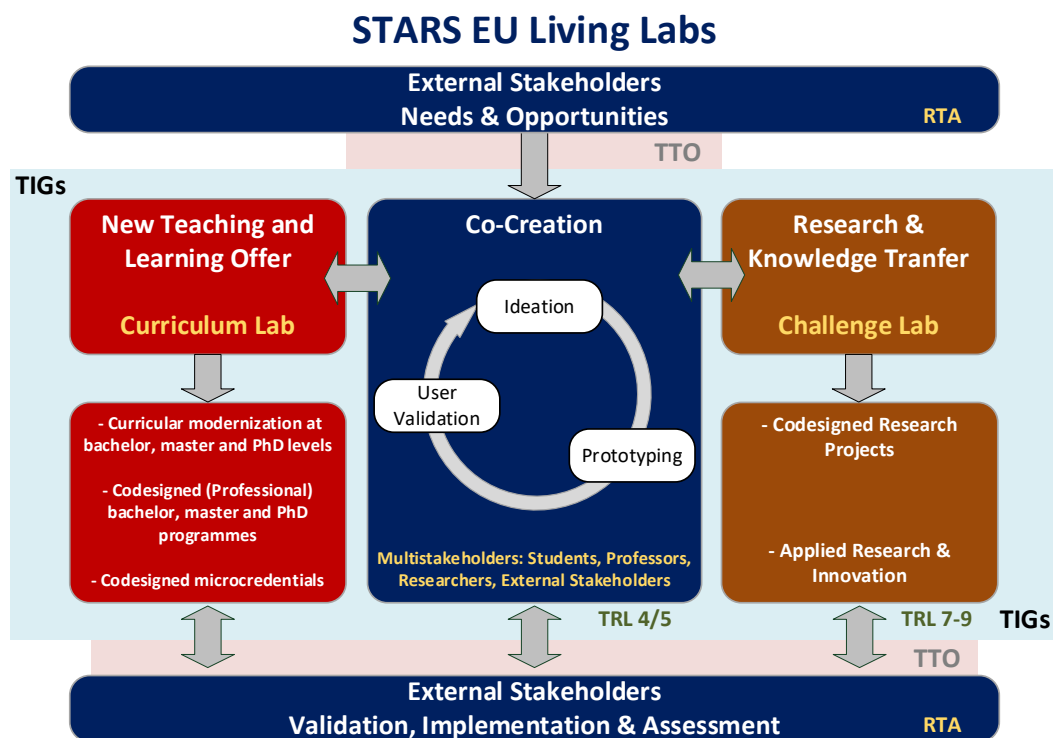
Concept and Operations

A plan for action

STARS EU Living Labs are operated within the scope of the governance structure Regional Transition Accelerator and cooperates with both Curriculum Lab and Challenge Lab.

Each Living Lab will act as a multistakeholder partnership involving students, professors, researchers, industry, social sector, public entities and the civil society towards needs and opportunities identification, which after a co-creation ideation phase will be used as challenges by the Thematic Interest Groups (TIGs) towards new academic offers or new research oriented projects.

The following graphic intends to represent the concept and the operational working plan of STARS EU Living Labs.

STARS EU Living Labs

External Stakeholders Needs & Opportunities		**RTA**

TTO

TIGs

New Teaching and Learning Offer **Curriculum Lab**	**Co-Creation**	**Research & Knowledge Tranfer** **Challenge Lab**

Ideation

User Validation

Prototyping

- Curricular modernization at bachelor, master and PhD levels

- Codesigned (Professional) bachelor, master and PhD programmes

- Codesigned microcredentials

Multistakeholders: Students, Professors, Researchers, External Stakeholders

- Codesigned Research Projects

- Applied Research & Innovation

TRL 4/5   **TRL 7-9**   **TIGs**

TTO

External Stakeholders **Validation, Implementation & Assessment**		**RTA**

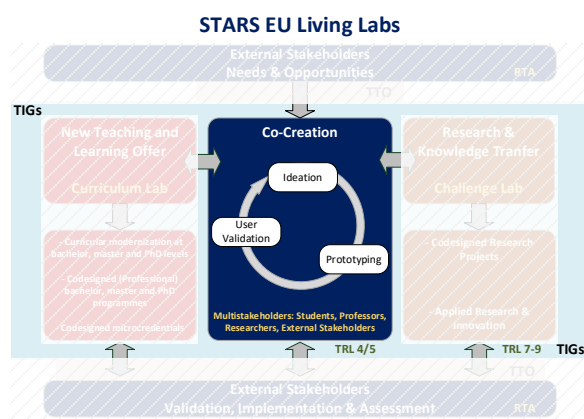Phase 1 -For the Needs & Opportunities identification, the Living Lab team will identify the appropriate stakeholders and invite them to take part on think tanks; focus groups or sectorial meetings. The
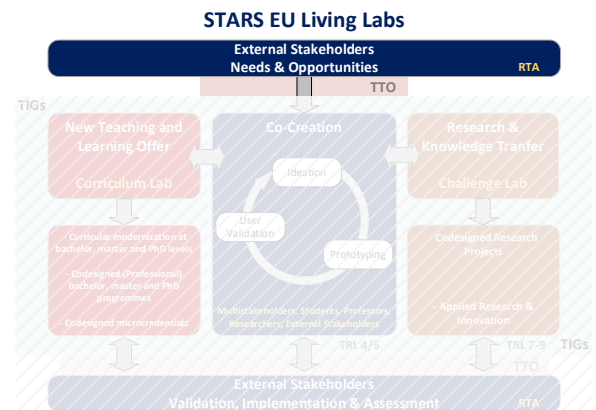
stakeholders identification will consider inputs from TIG leaders.

The meetings or events will be facilitated by experts in active methodologies promoting a dynamic environment.

On a first phase these events will happen in each country. In a matures phase these events will be international, online involving several STARS EU partners.

Phase 2 (TRL level: 4/5) - After identifying needs and opportunities, Living Lab teams will involve multistakeholders in a co-creation process, based on future design and speculative design methodologies. This process, implemented within TIGs activity, intends to ideate, prototype and validate with potential users a concept of solution that will be further developed into a final solution, either through Curriculum Lab or Challenge Lab.
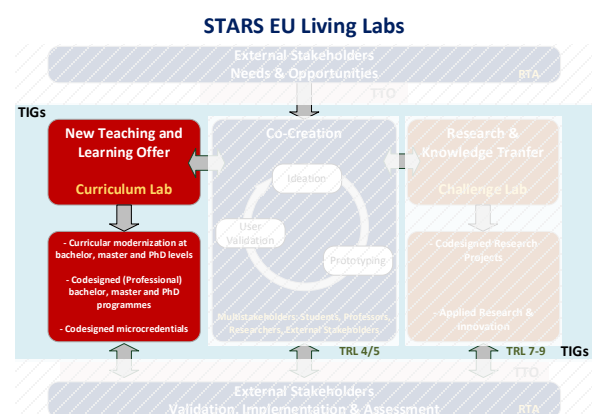
Phase 3 - Whenever the co-creation process identifies a solution based on new teaching and learning offers, TIGs, accordingly to Curriculum Lab policies and strategies will implement Curricular modernization at bachelor, master and PhD levels. STARS EU focus on regional development hence training the future talents and up or reskill the current workforce is crucial to achieve our goal. The (re)newed degrees and microcredentials will be co-designed with multistakeholder partnerships increasing relevance of training programmes and improving quality. The joint training activities will also include
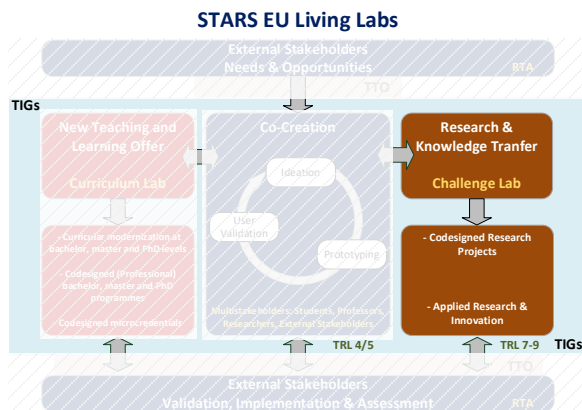
workshops, seminars, conferences, organized locally but also interregionally in STARS EU.
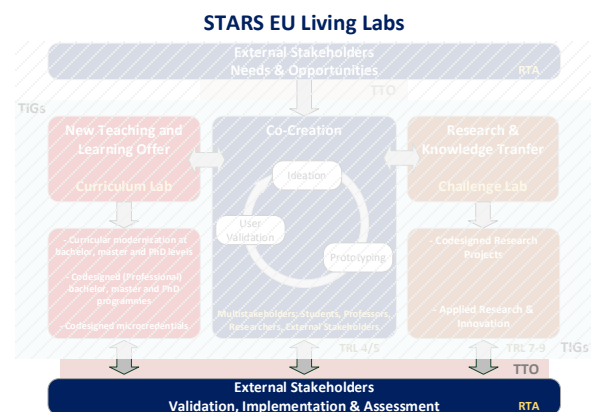
STARS EU Living Labs

Phase 4 (TRL level: 7-9) - The Co-creation process can produce concepts of new products and services that need to be fully developed with highly skilled researchers. TIGs, following Challenge Lab research strategy, will be implementing the codesigned research projects targeting applied research and knowledge transfer.

The Challenge Lab and research structures will also be involved in local and interregional events workshops, seminars, conferences.

Phase 5 - TIG activities challenge based results, both from academic and research activities will be validated, transferred for real world setting implementation and assessed by the external stakeholders.

This last phase can also feed back into the co-creation process new challenges in a continuous cooperation process.

The STARS EU regional impact will be tangible and perceived when this co-creation – teaching & training – research is fully operational.

STARS EU Living Labs

Final remarks: Living Labs are central to the mission of STARS EU

The STARS EU Living Labs concept leads in a new era of collaborative innovation, tackling persistent societal challenges through multistakeholder approach.

In our Alliance Living Labs act as breeding grounds for real-world innovative solutions. These labs function as an ecosystem where academia, industry, government, social enterprises, and citizens come together. Through workshops, focus groups, and other interactive sessions, they identify regional needs and opportunities. This collaborative methodology co-create solutions that are user-centered and address challenges from interregional economic and social activities.

STARS EU Living Labs don't just identify challenges; they empower stakeholders, that longside with researchers, professors and creative students co-create ideas, concepts and solutions. Using cutting-edge design methodologies, participants brainstorm, prototype, and validate innovative solutions that can take the form of:

- (Re)newed Academic Programs: Identified needs lead to co-designed degrees and micro-credentials, ensuring graduates possess the most relevant skills for the job market and are better skilled to address the local, regional, European and global challenges.
- Applied Research Projects: Co-created concepts that with commercial potential are channelled into research projects, leading to new products and services that are transferred into local economy and society.

The impact of STARS EU Living Labs extends far beyond using continuous feedback loop to fuel new challenges and foster a dynamic ecosystem for ongoing innovation.

In essence, STARS EU Living Labs redefine the traditional boundaries between industry and higher education, creating a powerful synergy that drives positive regional change.

Prototypes - 7 Living Lab models (one in each STARS EU priority area)

Main characteristics:

- Specify the characteristics of at least 7 different STARS EU interregional Living Lab model structures (one per Priority Area), their statuses, membership, typical activities and their resources (M12), within the STARS EU Priority Areas (M12).

STARS EU Priority areas:

- i) Circular Economy, ii) Energy Transition, iii) Digital Transition; iv) Arts and Creative Industries; v) Healthy Ageing; vi) Entrepreneurship and Innovation and vii) Living Spaces.

Methodology

Key elements defining the specificity of the Living Lab approach

The implementation of the pilot Living Lab in the municipality of Macedo de Cavaleiros (Portugal) and the comparison of different research approaches, give a basic description of the key elements that constitute the specificity of a Living Lab approach:

- The first key characteristic involves situating the work within a real-world context, where multiple stakeholders from various organizations and areas of expertise interact.
- Secondly, users take an active role as co-innovators, engaging in the creation, prototyping, validation, and testing of products, services, systems, and technologies in real-life environments (In our Living Labs we consider a high-level prototyping).
- Thirdly, research teams are actively embedded in the research setting, facilitating a multidisciplinary approach to achieving the desired outcomes.
- Lastly, collaboration in both physical and virtual spaces is crucial for fostering interaction and driving results.

Proposed methodology

As presented in the previous section, the proposed action plan has 5 steps (phases): The proposed methodology is described in the next sections.

- Phase 1 - Needs & Opportunities identification:

a) Defining the scope and objectives:

- o The initial step is to define the living lab's scope and objectives. This includes identifying the specific problem or challenge the Living Lab will address, determining the target user groups, and outlining the expected outcomes.
    - ▪ This process is often more complex than it appears and may require multiple iterations with key stakeholders. Various stakeholders may have different perspectives on how the living lab's outcomes align with their strategic goals. It's essential to manage potential conflicting interests and reach a consensus on shared objectives.
- o In next phase (Phase 2 – c) Roles and responsibilities definition), a living lab coordinator or manager may be appointed. This participant may differ from the person or organization that initiated the lab, ensuring a dedicated focus on achieving the established goals.

b) Identifying stakeholders:

- o The success of a living lab depends on the active participation of a diverse range of stakeholders, including users, businesses, government agencies, higher education institutions, students, and academia. Identifying and engaging these stakeholders early in the process is crucial for the living lab's effectiveness and impact
- o The stakeholders identification will consider inputs from TIG leaders.

c) Selecting the location:

- o The location of the living lab should be carefully selected based on the needs of the target users and the availability of resources. It should be easily accessible and conducive to collaboration and experimentation.
- o This location can be provided by one of the project partners; for example, the municipality might grant an office.

d) Involving STARS EU partners:

- o Interregional approach.
- o Roll-out the 7 interregional Living Labs and set up 5 additional Living Labs structures, using an interregional approach applying multi-cross-sectoral perspectives combining the STARS EU Priority Areas.
- o Scheduling meetings with STARS EU partners

e) Setting up the infrastructure/resources/materials:

- o The living lab requires a variety of infrastructure and resources, including physical space, equipment, and technology. These elements should be thoughtfully selected and configured to effectively support the Living Lab's objectives and the needs of its participants.

- Phase 2 – Co-creation:

a) Identify the research questions/problems/ideas, select appropriate data collection methods, and develop the evaluation framework. Address the problem discussed in the local democracy lab.

   ▪ Collect data that can help better understand the problem: This may include surveys, interviews, focus groups, etc.

b) Recruiting participants (Creation of the core living lab team):

   o Recruiting participants is a vital step in the living lab process. Participants should be chosen based on their relevance to the specific problem or challenge being addressed, ensuring they are both willing and able to engage actively.

   o Understanding the motivations, interests, cultures, and working styles of all stakeholders involved in the living lab is essential. This awareness can foster ongoing involvement and commitment from participants over the long term.

   o Once the core team is established, it's important to assess which external parties could contribute to achieving the living lab's goals and identify any gaps that need to be filled.

c) Definition of roles and responsibilities:

   o After the core team is established, roles and responsibilities within the living lab can be clearly defined (e.g., coordinator/manager, participant, user, customer, etc.).

   o Stakeholders may assume different roles depending on the specific issues being addressed within the living lab.

   o To minimize potential conflicts of interest, it can be beneficial to have an impartial third party manage the living lab. This could be a researcher, an external process manager, or a representative from a different municipal agency.

   o It is crucial to have a clear understanding of the needs, goals, interests, and commitments of all participants in the core team, as this will facilitate collaboration in setting up the living lab.

   o It's important to recognize that not all partners will contribute equally. Participants should proactively indicate where they can add value, and collaboratively work towards the effective allocation of all necessary roles and responsibilities.

d) Selecting the Governance model:

   o Develop a formalized agreement template, such as a contract or letter of intent. Given the variety of governance models available for living labs, it's important to select a structure that best fits the unique needs of each lab. Options may include a memorandum of understanding, informal agreements, working groups, or covenants.

   o This step is crucial for prioritizing the living lab among participating stakeholders and securing its long-term sustainability. It also provides a framework for clearly defining roles and responsibilities within the living lab, partnership, or network, while offering an opportunity to communicate plans to external audiences.

   o Despite the dynamic and often unpredictable nature of living lab processes, effective management is essential. This ensures progress is made, activities

are monitored, and resources and personnel are organized to achieve tangible results.

e) Definition of the meeting calendar, deadlines, outcomes (for example: reports to be produced), and budget:

  o It is important the definition of the type of meetings (presential or online) and the frequency of meetings (weekly, monthly, etc.).

  o The identification of the reports to be produced and deadlines will guide the Living Lab process.

  o Budget definition.

f) Implementing the co-creation process (Operation of the living labs):

  o After the core living lab team is in place and its commitment to work on commonly agreed ambition, planification and goals within living lab set up is formalized, the operation of the Living Lab co-creation process can start.

  o Also, the living lab should be implemented according to the defined methodology, with careful attention to the needs of the participants and the objectives of the living lab.

  o Initial preparatory steps can include:

    ▪ Analysis of the region/ecosystem (allows to identify early enough what are potential risks and opportunities from the direct Living Lab environment);

    ▪ Identification of potential ideas and solutions to develop within a Living Lab;

    ▪ Development of monitoring and measuring system (Evolution should encompass both individual experiments carried out in the Living Labs, as well as monitoring of the Living Lab operation itself).

  o Develop ideas about solutions to test in order to solve a problem or/and to reach living lab ambition. These ideas for action provide the initial direction for the living lab development.

    ▪ To ensure the success of the proposed solution, it is crucial to evaluate whether it aligns with the overarching goals and ambitions of the Living Lab. This includes determining if it effectively addresses one or more of the lab's objectives and meets the needs of users, customers, and stakeholders. Additionally, it's important to assess whether the solution is sensitive to potential risks.

    ▪ Moreover, the proposal must be reviewed to confirm that it fits within the budget, utilizes available resources (including time and manpower), integrates smoothly into existing operational processes, and aligns with the technical capabilities and system maturity of the Living Lab. The involvement of all participants in this evaluation process is key, and the final decision should be backed by all major partners to ensure collective support and commitment.

  o The co-creation process can be finalized with creation of an action plan that documents key agreement points: the ambition, goals, scope, key factors, risks

and opportunities that were identified and which should be closely monitored throughout the whole living lab process.

- o The pre-selected implementation cases are documented and the structure of the Living Lab is defined.

- o Finally, the evaluation framework is described explaining the monitoring processes and methods to evaluate the implementations.

- o Stakeholder cooperation and commitment needs to be managed throughout the Living Lab. It is necessary to guarantee that stakeholders and users have the right expectations from the Living Lab and its outcomes and stay committed.

  - ▪ Management of stakeholder expectations starts with having a good understanding of the stakeholders expectations. Involving them continuously throughout different stages of the Living Lab will make sure that they have a

g) Evaluating the outcomes:

- o The living lab should be evaluated to assess its effectiveness in achieving its objectives. This involves collecting and analyzing data, and using the findings to inform future iterations of the living lab.

  - ▪ It includes establishing an evaluation framework, data collection and data analysis.

- o Document the impact of the living lab:

  - ▪ The researchers should collect data that measures the impact of the co-creation process and reflect on lessons learned and replicability in other contexts.

h) This process, implemented within TIGs activity, intends to ideate, prototype and validate with potential users a concept of solution that <u>will be further developed into a final solution, either through Curriculum Lab or Challenge Lab.</u>
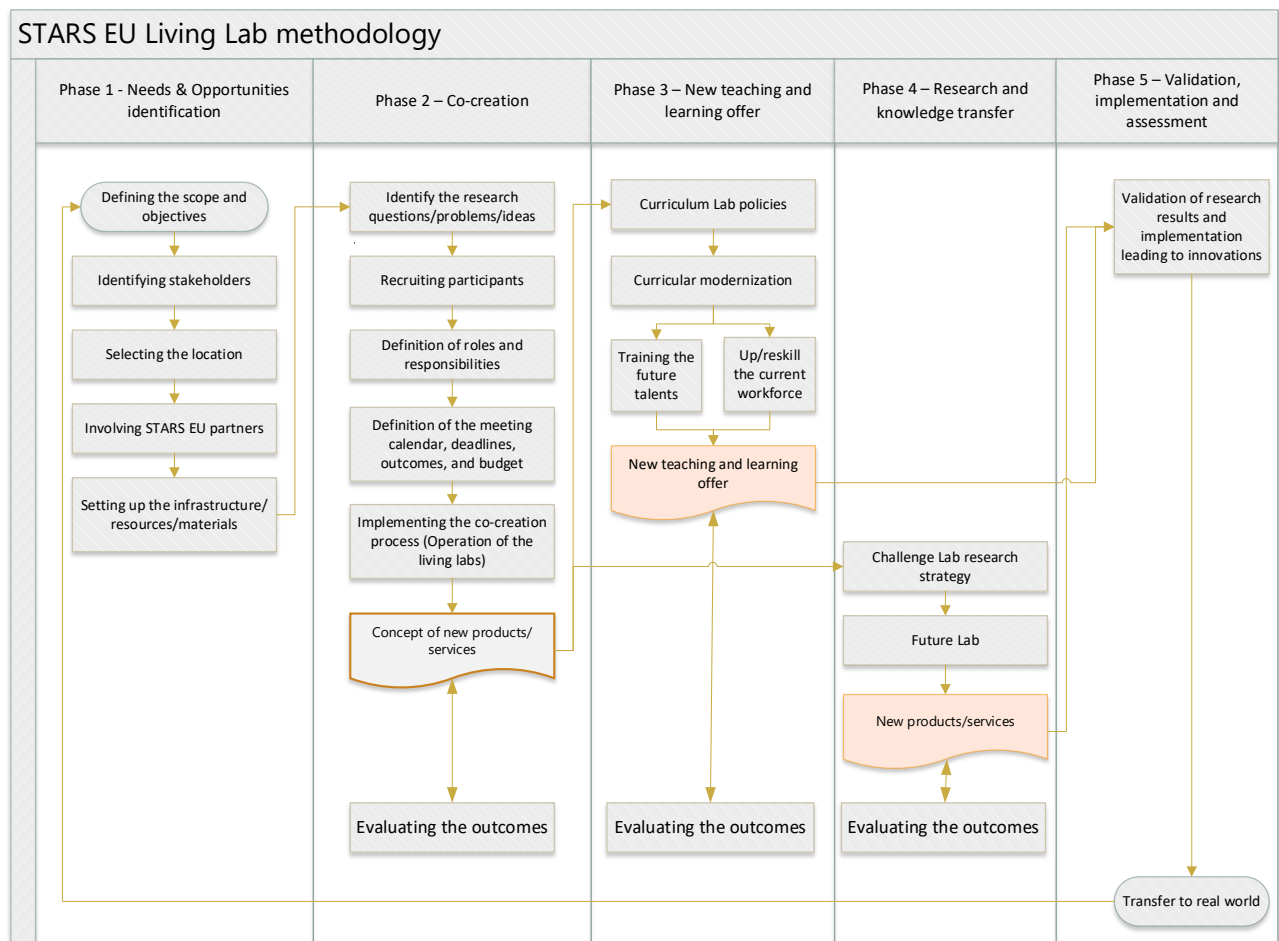
- Phase 3 – New teaching and learning offer:

  - o Whenever the co-creation process identifies a solution based on new teaching and learning offers, TIGs, accordingly to Curriculum Lab policies and strategies will implement Curricular modernization at bachelor, master and PhD levels.

  - o STARS EU focus on regional development hence training the future talents and up or reskill the current workforce is crucial to achieve our goal.

  - o The (re)newed degrees and microcredentials will be co-designed with multistakeholder partnerships increasing relevance of training programmes and improving quality.

  - o The joint training activities will also include workshops, seminars, conferences, organized locally but also interregionally in STARS EU.

- Phase 4 – Research and knowledge transfer:

  - o The Co-creation process can produce concepts of new products and services that need to be fully developed with highly skilled researchers.

  - o TIGs, following Challenge Lab research strategy, will be implementing the codesigned research projects targeting applied research and knowledge transfer.

- o The Challenge Lab and research structures will also be involved in local and interregional events workshops, seminars, conferences.
- Phase 5 – Validation, implementation and assessment:
  - o TIG activities challenge based results, both from academic and research activities will be validated, transferred for real world setting implementation and assessed by the external stakeholders.
  - o This last phase can also feed back into the co-creation process new challenges in a continuous cooperation process.
  - o The STARS EU regional impact will be tangible and perceived when this co-creation – teaching & training – research is fully operational.

Next figure shows the structure of the STARS EU Living Lab methodology.

STARS EU Living Lab methodology

Phase 1 - Needs & Opportunities identification	Phase 2 – Co-creation	Phase 3 – New teaching and learning offer	Phase 4 – Research and knowledge transfer	Phase 5 – Validation, implementation and assessment
Defining the scope and objectives	Identify the research questions/problems/ideas	Curriculum Lab policies		Validation of research results and implementation leading to innovations
Identifying stakeholders	Recruiting participants	Curricular modernization		
Selecting the location	Definition of roles and responsibilities	Training the future talents / Up/reskill the current workforce		
Involving STARS EU partners	Definition of the meeting calendar, deadlines, outcomes, and budget	New teaching and learning offer	Challenge Lab research strategy	
Setting up the infrastructure/ resources/materials	Implementing the co-creation process (Operation of the living labs)		Future Lab	
	Concept of new products/ services		New products/services	
	Evaluating the outcomes	Evaluating the outcomes	Evaluating the outcomes	Transfer to real world

How to motivate the stakeholders to participate and to maintain the interest?

A living lab's success centers on the active participation of a diverse range of stakeholders, including users, businesses, government agencies, higher education institutions, students, and academia. Early identification and engagement of these stakeholders are crucial for the lab's effectiveness and impact. Understanding the motivations, interests, cultures, and working styles of all stakeholders is essential. This awareness can foster long-term involvement and commitment.

A key precondition for successful collaboration is intrinsic motivation from all stakeholders. If even one stakeholder is not convinced of the project's alignment with their interests, integrated solutions ensuring long-term social, economic, and environmental sustainability will be challenging. This intrinsic motivation should be rooted in a shared project vision, whether by delivering added value aligned with stakeholders' strategic or commercial goals or by tapping into their internal passion and commitment.

A central element of this shared vision must be a willingness to embrace new approaches. Participants need to adopt a communicative and transparent attitude, openly sharing their knowledge, interests, and objectives. This may require a cultural shift, especially for those accustomed to withholding information. Recognizing the legitimate interests of all stakeholders is essential for creating a truly sustainable solution.

Moreover, participants must remain open-minded and recognize that collaboration can reveal new or better solutions to challenges. By fostering an environment of trust and open exchange, the living lab can unlock innovative ideas and deliver more effective outcomes. Stakeholders can also benefit from the creation of new curricular programs that align with their specific human resource challenges. These programs can modernize curricula and upskill or reskill the existing workforce.

How to involve the STARS EU partners?

To effectively involve STARS EU partners in living labs, the strategy should begin by identifying key professors, researchers and students, assessing their strengths, and defining clear roles. STARS EU includes a range of actors from academia, additionally to the external stakeholders already mentioned: industry, research, NGOs, government, and civil society, and it's important to understand how each can contribute to the innovation process. By determining their specific areas of expertise—whether in technology development, community engagement, or policy-making—each partner's role in the living lab can be tailored to maximize their contribution.

A critical part of the strategy involves co-creating the goals and objectives of the living labs. This can be done through collaborative workshops, where partners define shared objectives that align with the broader societal challenges targeted by STARS EU. These workshops also provide an opportunity to ensure that the living lab goals resonate with the individual missions of the partners, fostering a sense of co-ownership and commitment.

Establishing a shared governance structure is essential to ensure all partners feel invested in the process. An open, transparent model of governance will encourage participation and facilitate joint decision-making. STARS EU working groups shall be actively involved such as TIGs, communication, future labs, STARS EU officers, besides the structures Challenge Lab and Curriculum Lab, allowing lean and effective internal and external communication and dissemination and enlargement, as partners will engage how they are most suited.

Cross-sector collaboration is a key aspect of this strategy. To facilitate this, interdisciplinary teams should be formed, drawing participants from different sectors to co-develop solutions in real-world contexts. This also includes promoting knowledge transfer between academia and industry to ensure that innovations move from the lab to the market. Living labs should provide a platform for partners to actively collaborate, enabling technology transfer and practical testing of solutions.

Effective communication is crucial for the success of the living labs. Developing communication platforms, such as online hubs or regular meetings, will facilitate ongoing dialogue between partners. Dissemination of results through joint efforts, including conferences and public outreach events, will raise the visibility of living labs and their outcomes, helping to attract new partners and stakeholders.

Pilot projects – challenge-based innovation approach - will serve as the backbone of the living labs, where innovative ideas can be tested and refined through real-world experimentation. These pilot initiatives allow for iterative development, where feedback from all stakeholders—especially end-users—can help improve and scale solutions. This approach ensures that living labs are dynamic, constantly evolving environments where innovation is co-created.

Another vital component of the strategy is resource sharing and collaborative fundraising. STARS EU partners should work together to leverage EU and regional funding opportunities, aligning their living lab projects with European priorities like the Horizon Europe program. Additionally, partners can pool resources such as access to research data, technology platforms, and financial contributions to support the living lab's objectives.

Monitoring and evaluation are also important for ensuring that the living labs stay on track and achieve their intended impact. Partners should work together to co-create evaluation metrics, reflecting both societal impact and technological advancement. Regular feedback loops and review meetings will help adapt and refine the living labs over time, ensuring they remain relevant and effective.

Once solutions have been validated through pilot testing, partners can work on scaling these innovations. STARS EU's territorial and interterritorial focus is particularly useful here, allowing successful innovations to be adapted to different regions or sectors. By creating replicable models, living labs can become more versatile, addressing a wider range of societal challenges across different contexts.

Fostering long-term partnerships is key to ensuring the sustainability of the living labs. Partners should see clear, ongoing benefits from their involvement, whether through shared intellectual property, access to cutting-edge research, or societal impact. This long-term commitment will

help build trust and ensure the continued success of the living labs within the STARS EU framework.

This strategic approach positions living labs as dynamic platforms for innovation, capable of addressing societal challenges through collaboration between STARS EU partners.

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