Innovation Ecosystems for Vocational Education and Training

Innovation Ecosystem

Step-by-Step Guide



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Innovation Ecosystem Step-by-Step Guide

1. Introduction to an Innovation Ecosystem for VET

This short guide details the steps to be taken to develop and implement a collaborative ecosystem in an education institution, in order to foster innovation at all levels of education provision and to identify, test and pilot innovations in education systems across Europe. The content of this guide has been informed by the process undertaken by partner organisations involved in the Erasmus+ project, "Innovation Ecosystems for Vocational Education and Training" [InEcVET]. The InEcVET project has been funded under the 'Support for Policy Reform - Forward Looking Cooperation' measure of the Erasmus+ programme and is currently being delivered by 10 partners across 5 EU Member States, namely Ireland (3), Cyprus (2), Romania (2), Portugal (2) and Finland (1). This project has been developed by this team since November 2015. In this time, project partners have work together to involve relevant stakeholders from the VET sector and from the business community in each of these partner countries to address the specific aims and objectives of the project.

The aim of this project was two-fold; firstly it aimed to improve the contribution of VET to innovation in Europe and to the growth and sustainability of Europe's knowledge economy. Secondly, the project also aimed to increase the incidence and quality of innovation in VET itself. To achieve this, the project partners worked to define and pilot an 'innovation ecosystem for VET' that could support the identification, testing, development and assessment of new innovative approaches in the VET sphere. As part of this ecosystem, innovative projects were developed among teams of VET professionals. Those which had mainstreaming potential were further developed, piloted in their VET institutions and evaluated to form policy recommendations in support of using this approach. Ecosystems were created in Ireland, Cyprus, Romania and Portugal with the task of undertaking this process to develop a suitable innovation project that would address an identified gap in local VET provision. The purpose of undertaking these activities was that the local innovation project would have the potential to positively impact on the participating VET institution, but also have the potential to be mainstreamed to other VET institutions within the partner country and also across Europe.

Using this process and working in these ecosystems, partners were able to lead teams of professionals from all levels of VET management and teaching to identify the key issues in VET, to generate possible solutions to address these issues and to develop an innovation project which could be tested and piloted in their VET institution and if successful, could improve the contribution of VET to innovation in their country and in other EU Member States. These teams of professionals collaborated together using the Skunkworks model. The work of these Skunkworks team was supported by collaborative, informal partnerships of education providers, business owners, policy and decision makers and other relevant stakeholders. The ongoing interaction between these two teams was central to the ecosystem model developed and tested as part of this project.

The following document provides an overview of how these teams were established, what other supports existed within the innovation ecosystem and some recommendations for others to follow when developing their own innovation ecosystem. While this model can be replicated and adapted to any industry, due to the nature of our project, this guide has been written for use in the vocational education and training sector specifically.



2. Why build an Innovation Ecosystem for VET?

An innovation ecosystem for VET represents a pioneering approach to developing innovation in the VET sector which also helps to redefine how innovation in vocational education is perceived, achieved and measured. The innovation ecosystem model that was developed as part of the InEcVET project was designed to bring the worlds of business and education closer together. Partners developed these ecosystems because they believed that this was the best model which could be used to encourage greater cooperation between the worlds of work and education and to address some of the limitations evident in the VET sector. Through the increased cooperation and collaboration between these two pillars, project partners were confident that the innovation ecosystem model could be used to stimulate innovative responses to address needs of local businesses; to improve VET provision and make it more responsive to current and future market needs and to support policy reform in vocational education and training.

At present, across all EU Member States, VET providers are finding it challenging to keep pace with the demands of the changing labour market. The VET sector has undergone some reforms as a result of the economic recession of the last decade. Before the crash, VET providers offered certified training in a range of economic sectors and industries that had previously offered reliable and sustained employment to individuals. However, during the economic downturn, some of these industries were negatively impacted, suffering huge losses in employment and many have yet attain the pre-recession levels of employment. Despite this, some VET providers were unresponsive in re-developing their training offering and instead some continued to provide training in areas where there were no longer sufficient employment opportunities, throughout the economic recession. At this time of high unemployment, VET providers were also challenged with supporting low-skilled unemployed individuals back into employment, in addressing the needs of Europe's growing population of unemployed young people and in up-skilling an older workforce who were also victims of the recession. While Europe's economy is gradually recovering from the recession, with the disruptive changes to business models that will be brought on by advances in automation and digitisation in the future, this will also have a profound impact on the employment landscape over the coming years. In order to respond to these future changes and to make VET more responsive to the current unmet needs of the labour market, there is a need to find a new approach that will better integrate the worlds of work and of education so that VET can effectively prepare the employees of tomorrow by providing targeted, relevant, industry-standard training programmes to adult learners of all ages.

At the same time, VET institutions will need to consider how they market their training offering to businesses. While many employers seek candidates with third level qualifications when hiring new staff, research shows that VET graduates, particularly those who complete work placements and apprenticeship programmes as part of their training, have the practical skills and experience to have an immediate impact on the company's performance. However, there exists an information gap in some partner countries where the range of services, supports to business and training programmes offered by VET institutions is not effectively promoted among business owners; so local employers may not be aware of the fact that VET graduates are a genuine alternative to third level graduates when seeking to hire new employees. To bridge both this information gap and also the gap between the real skill needs of business and the responsiveness of VET to meet these needs, the innovation ecosystem model, which was tested as part of this project, has been found to be an effective means of bringing all actors together to tackle these issues.



3. Introducing our Innovation Ecosystem for VET: The InEcVET Approach

The innovation ecosystem model developed as part of this project was proposed initially as a means of encouraging VET providers in Europe to innovate at a time when resources are limited. Through the innovation ecosystem model, project partners soon realised that many of the resources which VET required to become more innovative already existed within these institutions. VET teachers, trainers, counsellors, support workers and managers all have the experience and expertise to understand the issues affecting their sector; through the innovation ecosystem, they were given the time and support to further develop their understanding of these issues by working with like-minded colleagues to identify new ways of teaching; to bring about a re-thinking of how educators and employers interact with one another; to support the uptake of and engagement with new technology enhanced environments and to achieve a better understanding of future skill needs.

Despite this fact, it is widely accepted that the aptitude for being innovative, creative and solution-focused within VET is largely underdeveloped. One reason for this could be a lack of suitable learning resources and curricula for VET staff on the topic of innovation and creativity. To address this support need for VET staff and to encourage innovation at all levels of VET institutions, in the approach developed by the InEcVET project team, an innovative curriculum was produced on the topic of intrapreneurship. The intrapreneurship curriculum was a useful resource and reference for VET tutors and staff who were engaged in the Skunkworks teams because it providing them with the theory and practice they needed to develop their skills as innovators within their own organisations. This curriculum will be further discussed later in this guideline.

Another reason why the capacity for innovation in the VET sector is underdeveloped may be as a result of a reluctance from VET administrations and policy-makers to implement widespread change. To address this barrier to innovation, the ecosystem model incorporates a substantial review and evaluation process, where all innovations are tested, piloted and evaluated to form succinct and relevant recommendations for future innovators who wish to use this approach to foster innovation in their own organisations. To present these recommendations, the InEcVET project partners have produced a policy paper which outlines the policy implications and a cost-benefit analysis for developing an innovation ecosystem in a VET institution. It is foreseen that the content of this paper can be used to quell the reluctance of decision- and policy-makers to embrace the changes which are now required in this sector.

Through producing these resources, establishing teams of VET professionals and introducing informal partnerships were representatives from education, business and policy can work together to tackle the identified issues affecting VET provision, the InEcVET project has undertaken a bottom-up approach to policy change; choosing to test the innovation ecosystem model on the ground first to ensure it is the most effective means of encouraging innovation in the VET sector and then making evidence-based recommendations for it to be adopted across the VET sector in Europe.



4. Building an Innovation Ecosystem

The first step in building our ecosystem was to ensure that we had the most appropriate project partners engaged from the beginning to develop the project idea and the ecosystem model and to be able to effectively evaluate the successes and shortcomings of this model. The InEcVET project consortium is therefore composed of key stakeholders from public, private and not-for-profit sectors, all with vast experience in designing and delivering programmes for VET, some with a focus on working with the business community and others with expertise in using innovative practices in VET such as online learning, mobile learning and gamification. Some partners specialised mostly in providing traditional, classroom-based education and training programmes but they also had experience of engaging employers in delivering apprenticeship programmes and work-based learning activities. As such, the project consortium involved all of the key players required to be able to build this ecosystem, to test the prototype and to refine the model to ensure its sustainability.

Once this team was assembled, partners began the task of mapping our ecosystem; identifying the key elements and supports required to build a sustainable innovation ecosystem that would be fit-for-purpose in activating individual VET professionals and organisations to engage in innovative practices. In order to complete our map of the ecosystem, project partners first has to outline what they wanted the ecosystem to achieve. Once we outlined our aims for the ecosystem, we were able to identify the key actors we needed to involve and the supports we would have to provide in order to ensure the ecosystem flourished. Through this process, project partners identified that they would need to develop the following elements to ensure that the ecosystem was fit-for-purpose and sustainable:

- 1. Multi-stakeholder partnerships comprised of local employers, business owners, VET teachers, trainers and managers and policy-makers. The aim of these partnerships was to inform and drive the VET innovation process.
- 2. A framework to guide the development of Skunkworks teams in each partner country composed of VET professionals with an interest in developing their capacity for innovation. These teams worked to develop an innovation project to be tested in their institution, with ongoing support from the multi-stakeholder partnerships.
- 3. A bespoke and accredited intrapreneurship curriculum to foster creativity and innovation and to support the continuous professional development of teachers and tutors. This curriculum was completed by educators involved in the Skunkworks teams.
- 4. A framework to guide the processes of evaluating the success of the innovation project developed by the Skunkworks teams and for developing the cost benefit analyses to assess the potential for the widespread application and scalability of the innovation developed in each partner country.



5. Key Elements for Developing a Successful and Sustainable Ecosystem

Like any other ecosystem, there were significant interdependences between the constituent elements of the ecosystem. Working together, the following teams were established by project partners in each partner country. These teams were the core constructs of our ecosystem, becoming the agents of change and innovation in local VET institutions.

5.1 Multi-Stakeholder Knowledge Partnerships (MSKP)

Multi-Stakeholder Knowledge Partnerships (MSKPs) were the first team of external actors who were engaged as part of the building the ecosystem. In each partner country, it was agreed that partners should provide a forum where the worlds of work and education could meet and discuss, both face-to-face and via email, how VET provision could be improved to better address the needs of local business. To facilitate this informal networking between local businesses and local education providers, project partnership established Multi-Stakeholder Know-ledge Partnerships (MSKP) in each partner country. These informal partnerships were comprised of local entre-preneurs, small business owners and managers, education providers such as VET trainers, tutors and guidance counsellors, education managers, business support agencies and policy-makers and decision-makers from the fields of enterprise and education. These stakeholders brought together the core elements required by the proposed innovation ecosystem. Thus, MSKPs defined and drove the development of the innovation ecosystem and added weightiness to the results of the process, influencing policy recommendations based on their experience of working in this ecosystem to discuss innovation in VET. The multi-stakeholder participation also safeguarded that possible collaboration between VET policy and other policy areas like employment, economic affairs, social affairs, etc. were recognised and bound in support of the project goals and objectives.

The primary task of these partnerships was to support the development of the innovation project, by identifying the current and future skill needs of the local labour market and also defining ways in which VET provision could be tailored or refined to address these specific local needs. These informal MSKP meetings also allowed a platform for business owners and education providers to discuss the future of VET provision and the opportunities for micro-enterprise owners and employees with little spare time to engage in learning through different environments, including online learning, mobile learning and work-based learning. Through these partnerships, VET courses were also promoted among business stakeholders. While many small business managers and entrepreneurs engage in business-related training, there is a tendency for these businesses to avail of training from private firms which are often more expensive than public VET providers. Through their participation in the MSKPs, businesses were able to engage with local education stakeholders to learn of the advantages of hiring a VET graduate as opposed to hiring a third-level graduate and they also gained an insight into the choice of cost-effective training programmes available to them and their employees on their doorstep.

Members of these informal partnerships collaborated to support the development of the future innovation ecosystems; bringing together a vast and diverse set of skills, experiences, insights and resources that contributed to the development of innovation in the ecosystem. Comprising entrepreneurs, business and social innovators and local employers, the MSKP held a wealth of experience in practicing innovation from its business representatives alone. Often when we talk about innovation and creativity, they can seem like abstract concepts and competences that are difficult to attain. However, by securing buy-in from the business community through their participation in the MSKPs, this created the environment for informal knowledge transfer between the business and education representatives, facilitated through peer learning. As such, these stakeholders worked to proactively identify significant and emerging trends which will influence the labour market and its demands of VET; and also, and most

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importantly, they worked together to brainstorm effective innovations that could make VET more adaptive and responsive to these demands. Through this collaboration, the MSKPs helped to outline to work plan and key objectives to be achieved by the second team of professionals which was established in the ecosystem; the Skunkworks team of education professionals. As such, the MSKP had a central role in supporting the establishment of the Skunkworks team. As well as conducting a needs assessment to identify the current gaps in VET provision, the MSKP also acted as a sounding board for the proposed innovations suggested by members of the Skunkworks team. The MSKPs played a key role in supporting the Skunkworks team to design, develop, test and evaluate their innovation project and in assessing the value of the innovation using a cost-benefit analysis framework.

When identifying stakeholders to join the MSKP, keep in mind the 'time-poverty' which many entrepreneurs and micro-enterprise owners suffer from. They may not have the time to attend a lengthy face-to-face meeting during working hours, so instead, consider arranging MSKP meetings as breakfast meetings, in the evenings or invite local businesses to join daytime meetings via Skype or conference call. This will limit the time commitment required for businesses who wish to participate in the MSKP, which will be appreciated by local business owners.

5.2 Skunkworks

The second team of professionals that were assembled to contribute to the growth of our ecosystem was the Skunkworks team of VET professionals. The Skunkworks model was used to build a team of like-minded VET professionals with a common interest in developing the innovative potential of VET provision in their organisation. This model was chosen for a number of reasons. Firstly, innovation in the private sector is achieved in many ways but in most cases there is a strong teamwork element. In our ecosystem, project partners strived to create the conditions to support innovation by mimicking one of the most well-known private sector innovation models: the Skunkworks. Secondly, using this model, partners were able to create the right supportive environment for VET professionals to work together to experiment which possible solutions to the key issues affecting VET in their area, which had been identified by the MSKPs. The Skunkworks model is also proven way to introduce innovation and entrepreneurial competences in employees. Termed intrapreneurship, this is the ability act like an entrepreneur but within a larger organisation. What we mean by this is that employees would develop their abilities to identify opportunities for growth or advancement, to develop innovations, to take risks, etc. Using the Skunkworks model, we were able to create the right atmosphere in our ecosystem, to support the development of intrapreneurial competences in the Skunkworks team members. This up-skilling will ensure the future sustainability of the ecosystem in the participating VET organisations and further afield.

The first step in developing a Skunkworks team is to secure the permission of senior management within the participating organisation. The reason for this is that the Skunkworks team members will have to be able to allocate some of their working hours to participate in the work of the team. Team members need to be given the opportunity to participate, without being expected to complete all of their usual work tasks. In order to foster innovation, the team members need time to collaborate with one another, to test out their ideas, to develop and pilot their innovation project and then to evaluate the success of the project. Team members will not be able to do this if they are expected to participate in a Skunkworks and also maintain their usual work load and fulfil all of their responsibilities. Strong support and encouragement from high-level management makes the innovation process easier. It also reduces the risk that the Skunkworks project will fail to meet its objectives due to a lack of time or resources so it is important that support from management is secured before the Skunkworks team is established.

The next step project partners undertook to establish the Skunkworks team in each partner country was to invite staff from different departments within the participating VET organisation to join the Skunkworks team. We followed this approach, ensuring Skunkworks members were from different departments, because we wanted the Skunkworks to be representative of the entire range of services and programmes offered by the participating



VET organisation. Furthermore, in order to foster innovation and to develop VET professionals' ability to think differently and creatively, we needed to ensure that there were a range of opinions and perspectives in the room. The appeal of using the Skunkworks model is that it brings together employees who would not normally work together. This means that for the time dedicated to working with the Skunkworks team, the individual employee may be asked to work outside their comfort zone, to interact with new people, to adapt their style of working to a new environment, to engage with a topic they would not normally have the opportunity to work on; all of these factors can contribute to an employee being more open to innovative thinking and more likely to thinking up creative solutions to identified problems.

In each partner country, the Skunkworks teams collaborated over a series of 8 face-to-face sessions to develop an innovation project and to complete all 8 modules of the intrapreneurship curriculum. In some countries, a team leader was appointed to manage and oversee the work of the Skunkworks team. The Skunkworks leader helped to guide the work of the Skunkworks, to motivate members when they faced difficulties and challenges with developing their innovation project and to oversee the implementation of the intrapreneurship curriculum. This is not a necessary step to take for all Skunkworks teams, but where a leader was appointed, the focus of the team was maintained throughout the development, testing and evaluation of the innovation project.

The core activities of the Skunkworks team members were to take on board the recommendations from the MSKPs; to further develop their understanding of the gaps in provision which were identified by the MSKP and to get to work in finding suitable and innovative solutions to addressing these identified issues. The projects developed by the Skunkworks teams varied from country to country; but the processes undertaken in each country were the same. The Skunkworks teams also undertook to complete the intrapreneurship curriculum. Through this curriculum, the Skunkworks teams were guided through the processes of developing, testing and evaluating their innovation projects; additional details on how the curriculum was instrumental in supporting this process are included below.

The Skunkworks team was influential in determining the success of the ecosystem. Skunkworks team members play a key role in influencing the success of the ecosystem, because they are directly responsible for fostering innovation in VET by becoming agents of innovation in their own VET organisation and by developing innovative solutions which could then be up-scaled and applied to other VET organisations on a regional, national and European basis. The Skunkworks model is also pivotal to the success of the ecosystem going forward; while new members may join the Skunkworks to develop subsequent innovation projects, securing the buy-in from team members to continue their as intrapreneurs ensures the sustainability of the innovation ecosystem. Therefore developing a team of committed VET professionals with the right attitudes, motivations and skills profiles is of critical importance when developing an innovation ecosystem.

5.3 Intrapreneurship Curriculum

Intrapreneurship is often seen as a special case of entrepreneurship, sharing many important behavioural characteristics such as taking initiative, opportunity pursuit without regard to presently available resources, and some element of 'newness'. At the same time, intrapreneurship distinctly belongs to the domain of 'employee behaviour'– facing specific limitations that a VET organisation's hierarchical structure and internal environment may impose on individual initiative.

When developing an intrapreneurship curriculum, partners did not assume that the skills required for intrapreneurship are not present within the VET sector or indeed within the skunk-work team of the InEcVET project – however project partners sought to design a curriculum that is based on the desired and evidence-informed skills required to be successful intrapreneurs. Teachers working on innovative solutions and ideas to identify problems tend to focus on subject-specific innovations rather than innovations that look at teaching and learning approaches or en-

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vironments that could affect the VET system more broadly. To foster this ability to think beyond subject-specific innovations and to brainstorm innovations which could impact of the system of VET, project partners thought it was important to develop the intrapreneurial competences of VET teachers and tutors participating in the Skunkworks teams. However, as some Skunkworks members would already have competence in research skills, project management or leadership, for example, the curriculum was designed to be modular in nature so Skunkworks members had the option of only completing the modules where they had individual skill requirements. To add weight to its value and to ensure quality in developing the intrapreneurship curriculum, accreditation was sought from the Institute of Leadership and Management as a Continuous Professional Development award.

The intrapreneurship curriculum developed was a key resource in supporting the continuous professional development of teachers and tutors in VET, in providing them with a defined curriculum which would foster the specific skills they needed to develop new and innovative responses to persistent challenges in education and training. This curriculum comprises 8 modules which are delivered as a series of short, concise online lectures supported by self-directed project work for the fully online version and class based workshops for the blended learning model. For the purpose of developing our ecosystem, the intrapreneurship curriculum was delivered through a blend of online lectures and face-to-face sessions with worksheets and bespoke resources, specifically targeting the needs of Skunkworks members to support on their journey to become fully fledged intrapreneurs.

The intrapreneurship curriculum was designed to mimic the development of the Skunkworks team and the processes they would undertake to implement their innovation project in their VET organisation. The curriculum begins with an introduction to intrapreneurship and the skills required for effective intrapreneurship; in this module, Skunkworks members were also given the opportunity to undertake a self-assessment to identify their suitability for intrapreneurship and also to uncover the areas where they have additional learning needs. The subsequent modules follow the processes that all Skunkworks teams undertook to develop their innovation project to be tested in their VET organisation, namely: research and analysis to further develop the understanding of the issue identified by the MSKP, idea generation and evaluation to identify suitable innovations that could respond to these issues, critical thinking, problem-solving, lateral thinking and creativity to support Skunkworks members in overcoming challenges they will face in implementing innovative changes in their organisations, two modules which foster leadership and change management skills which are required to lead the process of change in a VET organisation and finally the last module which will develop the competence of Skunkworks members in project management, project evaluation and developing a costing analysis of their project. The final module also prepares Skunkworks team members to undertake the steps in closing out their innovation project, including presenting their results and recommendations to the high-level management in their VET organisation and to the members of their local MSKP, producing a cost-benefit analysis which will influence the scalability of the innovation project and presenting their research findings in a policy document which can support the lobbying of education policy-makers to support this change. As such, this intrapreneurship curriculum was a critical resource for supporting the work of the ecosystem, because as well as developing the core competences of the Skunkworks members as intrapreneurs; it also supported the process of generating and testing the success of innovations in a VET organisation.

Before this project, there was no online OER intrapreneurship curriculum available in Europe. This new continuous professional development resource is available in all partner languages through the project's e-learning platform and we would encourage all future innovation ecosystems to complete the curriculum to guide their work in developing innovation in the education sector.

5.4 Frameworks for Developing Evaluations and Cost-benefit Analysis

In order to assess the overall value of the innovations developed by the teams in the ecosystem, it was necessary for partners to ensure that all ecosystems completed a suitable qualitative and quantitative evaluation of the work completed by the MSKPs and the Skunkworks teams. To ensure that quality standards were maintained in the development of evaluation structures, the InEcVET partners developed guidelines for conducting project and ecosystem evaluations and cost benefit analyses to assess the value of the innovation developed and piloted in the participating VET organisation. These guidelines ensured that the ecosystems promoted innovations that were robust, fit-for-purpose and beneficial to the improvement of VET by undertaking an extensive guided evaluation of all work undertaken.

When developing the evaluation framework for this ecosystem, we determined that there are four elements which will need to be evaluated. These are as follows:

- 1. Evaluate the project concept did the project succeed in delivering its intended objectives? Has the forecasted benefit of this project been achieved?
- 2. Evaluate the project plan was the project plan reasonable and appropriate to achieve the project objectives and were the deliverable deadlines adhered to? Did the project plan exclude any necessary activities or include any unnecessary ones?
- 3. Evaluate the project-management methodology did the Skunkworks Framework adequately support the four stages of the project management cycle? Was the 4-stage model sufficient for managing the project?
- 4. Evaluate individuals' performance what feedback should the intrapreneur give to members of the project team regarding their performance? How should this be reported and presented to the Skunkworks and to the managers of the VET institution?

By following this framework, intrapreneurs working in this innovation ecosystem can adequately assess the success of the innovation in addressing the issue being tackled within their VET organisation.

Based on our proposed framework, to undertake a Cost-Benefit Analysis for the innovation piloted by the ecosystem the framework outlines a four-step process for intrapreneurs to follow. These four steps include brainstorming; assigning a monetary value to the identified costs; assigning a monetary value to the identified benefits and then comparing the costs and benefits.

For the evaluation of the innovation itself, as part of the InEcVET ecosystem model, partners recommend that future intrapreneurs and Skunkworks teams undertake regular evaluations throughout the development of their innovation project; this ensures that feedback and learning is captured while the experience is still fresh in everyone's mind. The Cost-Benefit Analysis should be conducted at the end of the evaluation process when accurate, evidence-informed costs and values can be attributed to the various elements of the VET innovation that was piloted in the ecosystem.

While the timeframe for this project was limited, and the potential to conduct wide-scale impact evaluations in our ecosystem was also limited, by providing these guidelines to shape the qualitative and quantitative evaluations, the InEcVET project team has strengthened the sustainability of the innovation ecosystem model. Using the evaluation and cost-benefit analysis frameworks, future innovation ecosystems will be able to accurately attribute a cost and a estimate the overall value of the innovation to their VET organisation and to the VET sphere as a whole. Using the metrics in these frameworks ensures that the innovation ecosystem model has the potential to be adapted and transferred to other VET providers within partner countries and across Europe.



6. Recommendations for Future Innovation Ecosystems

In developing our innovation ecosystem for VET, our project team undertook extensive work to reach the right stakeholders who would be engaged in the issues the ecosystem worked to address. These stakeholders also had to have the right skills and expertise to make meaningful contributions to the work of the various teams within the ecosystem. Furthermore, members of the skunkworks teams should have an interest in the process of innovation and should also demonstrate the key qualities of an entrepreneur – creativity, determination, innovation, motivation – to be able to work within the structure of the ecosystem to develop an innovative idea and bring the idea to fruition. Our first recommendation for other organisations seeking to establish their own ecosystem is to ensure that sufficient effort is put in to securing buy-in from people who will make a real difference to the work of the ecosystem. Ensure, where possible, that all actors in your ecosystem understand the goals of the project and are committed to achieving these goals.

Additionally, to outline the full list of tasks and responsibilities to be adhered to by the members of the MSKPs and the Skunkworks teams, the InEcVET project consortium developed two separate terms of reference documents, one for each team. These terms of reference also helped to formalise the structures of the MSKPs and the Skunkworks and to ensure the ongoing support and participation of all MSKP and Skunkworks members in the innovation ecosystem. Through our experience of working with, participating in and managing both teams of MSKPs and Skunkworks, we would recommend that future organisations seeking to establish an innovation ecosystem would undertake this step.

It can be difficult in the early days of establishing your ecosystem to help stakeholders to identify their role in the project. However, the terms of reference can help members of both the MSKPs and the Skunkworks to fully understand their role in the development of the ecosystem. The key message to remember is that the issues to be addressed in the ecosystem are determined through a needs assessment conducted with the MSKP members. By focusing on this message, it is easy to communicate to the MSKP members their advisory role in the ecosystem.

One difficulty which can be experienced with members of the Skunkworks teams is how to resolve the identified "innovation gaps" in soft skills and in areas, such as project management, leadership skills, teamwork, budget management, human resources, and risk assessment which will typically be the case with VET professionals who have limited experience and expertise of the business sector. For this reason, we would recommend that all future ecosystems follow the content of the intrapreneurship curriculum to address this innovation gap in the skill set of non-business sector professionals.

When developing a Skunkworks team, as was mentioned earlier in this guideline, it is important to secure the support from high-level management before the team is assembled and the work begins. For the innovation ecosystem to be successful and sustainable, there must be mutual trust between the management and the Skunkworks team. Therefore we would also recommend that the Skunkworks team leader take responsibility to report regularly to their managers so that they are kept up to date with the progress of the Skunkworks team.

Finally, we would recommend that all future innovation ecosystems ensure that they provide MSKP and Skunkworks members with access to on online discussion forum where participants can discuss issues or concerns as they arise, can share their knowledge, experience and any best practices they may have which could further enhance and support the work of all actors in the innovation ecosystem.













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