Digital4Security

Shaping Europe's cyber future

DIGITAL4Security Employability Strategy Report

D2.3

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1. About the Digital4Security project

Digital4Security is as a ground-breaking pan-European master's programme aimed at addressing the escalating challenges posed by cybersecurity threats and data privacy concerns across all industries. This €20m industry-led Master's is supported by funding from the DIGITAL Europe Programme, and comprises 34 partners spanning 14 countries. This industry-driven program will provide comprehensive knowledge of cybersecurity management, regulatory compliance, and technical expertise to European SMEs and companies.

The Digital4Security Consortium

The Digital4Security Consortium is a dynamic pan-European partnership of innovators in the field of cybersecurity. It comprises higher education institutions, industry partners, training providers and cybersecurity clusters, working together to design, promote and deliver a transformative cybersecurity management programme, developed and delivered by the best cybersecurity talent from Europe and worldwide.

No.	Role	Short name	Partner	Country
1	COO	POLITEHNIC A B.	UNIVERSITATEA NATIONALA DE STIINTA SI TEHNOLOGIE POLITEHNICA BUCURESTI	RO
2	BEN	SA	SCHUMAN ASSOCIATES SCRL	BE
3	BEN	Ataya	ATAYA & PARTNERS	BE
4	BEN	POLIMI	POLITECNICO DI MILANO	IT
5	BEN	CMIP	POLSKI KLASTER CYBERBEZPIECZENSTWA CYBERMADEINPOLAND SP. Z O. O.	PL
6	BEN	Contrader	CONTRADER SRL	IT
7	BEN	DTSL	DIGITAL TECHNOLOGY SKILLS LIMITED	IE
8	BEN	indiepics	INDEPENDENT PICTURES LIMITED	IE
9	BEN	MATRIX	MATRIX INTERNET APPLICATIONS LIMITED	IE
10	BEN	PROFIL KLETT	PROFIL KLETT D.O.O.	HR

11	BEN	ServiceNow	SERVICENOW IRELAND LIMITED	IE
12	BEN	UNIBS	UNIVERSITA DEGLI STUDI DI BRESCIA	IT
13	BEN	UDS	UNIVERSITY OF DIGITAL SCIENCE GGMBH	DE
14	BEN	SKILLNET	SKILLNET IRELAND COMPANY LIMITED BY GUARANTE E	IE
15	BEN	IT@CORK	IT@CORK ASSOCIATION LIMITED LBG	IE
16	BEN	ADECCO TRAINING	ADECCO FORMAZIONE SRL	IT
17	BEN	UNI KO	UNIVERSITAT KOBLENZ	DE
18	BEN	BRNO UNIVE RSITY	VYSOKE UCENI TECHNICKE V BRNE	CZ
19	BEN	MTU	MUNSTER TECHNOLOGICAL UNIVERSITY	IE
20	BEN	DIGITAL SME	EUROPEAN DIGITAL SME ALLIANCE	BE
21	BEN	DIGITALEUR OPE	DIGITALEUROPE AISBL*	BE
22	BEN	MRU	MYKOLO ROMERIO UNIVERSITETAS	LT
23	BEN	UNIRI	SVEUCILISTE U RIJECI	HR
24	BEN	NASK	NAUKOWA I AKADEMICKA SIEC KOMPUTEROWA - PANSTWOWY INSTYTUT BADAWCZY	PL
25	BEN	UNIR	UNIVERSIDAD INTERNACIONAL DE LA RIOJA SA	ES
26	BEN	NCI	NATIONAL COLLEGE OF IRELAND	IE
27	BEN	TERAWE	TERAWE TECHNOLOGIES LIMITED	IE
28	BEN	CY CERGY P ARIS	CY CERGY PARIS UNIVERSITE	FR
29	BEN	BANCO SANT ANDER	BANCO SANTANDER SA	ES
30	BEN	CYBER RANG ES	CYBER RANGES LTD	CY

31	BEN	RED OPEN S. R.L.	RED OPEN S.R.L.	IT
32	BEN	VMU	VYTAUTO DIDZIOJO UNIVERSITETAS	LT
33	AP	FHG	FRAUNHOFER GESELLSCHAFT ZUR FORDERUNG DER ANGEWANDTEN FORSCHUNG EV	DE
34	AP	Pearson Benelux	Pearson Benelux BV	NL

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3. Executive Summary

This report provides comprehensive insights into the Digital4Security master's programme, focusing on employability strategies, career development methodologies, and conclusions drawn from industry partnerships. The employability strategy underscores the importance of meticulous planning and comprehensive information dissemination to foster successful collaborations with industry stakeholders. It emphasises defining course structures, academic prerequisites, internship calendars, and legal regulations to ensure effective participation from companies. The career development methodology outlines the collaborative approach employed in constructing the Alumni Network, involving extensive research, stakeholder engagement, and thematic categorization of ideas. Our analyses highlight the need for clear communication, structured schedules, legal compliance, and resource allocation to implement effective employability strategies. They emphasise the importance of sustained industry collaboration, adaptive learning models, and excellence in legal and administrative standards for future projects aimed at enhancing digital skills and employability. This collective insight provides a strategic framework for guiding the current programme and serves as a blueprint for future initiatives to address industry needs and contribute to the development of a skilled workforce.

4. Employability Strategy

4.1.   Task Methodology

4.1.1. Introduction

The development of the Employability Strategy within the Digital4Security (D4S) project is guided by a detailed task methodology aimed at ensuring comprehensive planning and seamless execution. This process is divided into four crucial phases: Task Analysis, Work Breakdown Structure (WBS) Development, Roadmap Development, and Analysis of Relationships with Other Work Packages (WPs) and Tasks. This structured approach ensures that the Employability Strategy aligns with the project's goals, enhances student employability, and fosters robust industry partnerships and an active alumni network.

4.1.2. Task Approach

The development of the activity comprised the following phases:

1. **Task Analysis**:
   A thorough examination and understanding of the tasks to identify key components and requirements.
   a. **Purpose**: To dissect and comprehend the project tasks fully, ensuring all aspects and requirements are identified.
   b. **Outcome**: A clear understanding of each task's scope, objectives, and necessary resources, forming the basis for subsequent planning phases.
2. **Work Breakdown Structure (WBS) Development**:
   Creating a detailed hierarchical decomposition of the project into manageable work packages.
   a. **Purpose**: To decompose the project into a structured hierarchy of manageable work packages.
   b. **Outcome**: A detailed WBS that provides a clear framework for project execution and progress tracking.
3. **Roadmap Development**:
   Crafting a strategic plan that outlines the project's timeline, milestones, and key deliverables
   a. **Purpose**: To establish a strategic timeline that outlines key milestones, deliverables, and deadlines.
   b. **Outcome**: A comprehensive project roadmap that guides the project team through each phase, ensuring timely and orderly progress.

4. **Analysis of Relationships with Other Work Packages (WPs) and Tasks**:
Evaluating dependencies and interactions with other project elements to ensure cohesion and alignment.
   a. **Purpose**: To identify and analyze dependencies and interactions between different WPs and tasks within the project.
   b. **Outcome**: A well-integrated project plan that ensures all elements are aligned and any potential conflicts or overlaps are addressed.

4.1.3. Task Analysis

The primary objective of this document is to establish a foundational framework. Its purpose is to serve as a baseline, facilitating the delineation of the tasks embedded within the Employability Strategy. The intention is to undertake this detailed definition process in the year 2024, ensuring a comprehensive understanding of the components involved in the implementation of the activities.

These are the main references regarding the development of the Employability Strategy in the context of the Digital4Security project:

- Project Proposal – Page 40
- Grant Agreement – Page 10
   T2.5 - Design the Employability Strategy
   Establish partnerships with companies that want to become involved in the programme and are interested in offering internship positions and recruiting students for D4S. Design the Employability Strategy to fast-track graduates into new cybersecurity roles within companies and SMEs. Establish an Alumni Network to capitalize on former students offering job positions and offer opportunities to those looking for a job. Introduce micro credentials and micro degrees to support specific skills needed by companies.

4.1.4. WBS Development

The Work Breakdown Structure (WBS) has been meticulously crafted based on the elements outlined in the task description. This structured approach ensures clarity and precision in project execution. The WBS is organized as follows:

- **T2.5 Employability Strategy**
   - **T2.5.1 Partner Initial Engagement**: Initiating and formalising relationships with potential partners.
   - **T2.5.2 Companies Partnership**: Establishing strategic partnerships with companies to enhance employability opportunities.

- o **T2.5.3 Employability Strategy**: eveloping a comprehensive strategy to enhance Task 7: Work-Based Learning and Employability Program in WP4. This strategy outlines the guidelines to be followed for its implementation in WP4.
- o **T2.5.4 Alumni Network**: Building and maintaining a robust network of alumni to support employability initiatives.
- o **T2.5.5 Deliverable Structure**: Defining the structure and format of deliverables to ensure consistency and quality.

Each element of the WBS is associated with specific intermediate outputs, aligning with project management best practices to streamline deliverable construction

Detailed Breakdown and Rationale:

1. **Decomposition**: The WBS employs a hierarchical decomposition of the project into smaller, more manageable parts. This approach aligns with SME standards, ensuring that each work package is clearly defined and can be effectively managed.
2. **Deliverable-Oriented**: The focus on deliverables ensures that each segment of the WBS is tied to a tangible outcome, facilitating progress tracking and quality assurance.
3. **Intermediate Outputs**: By linking each branch of the WBS to intermediate outputs, we ensure that each phase of the project contributes to the final deliverable. This alignment helps in maintaining project momentum and achieving milestones as planned.
4. **Clarity and Accountability**: Assigning specific tasks and outputs to distinct elements of the WBS enhances clarity and accountability. Each team member understands their responsibilities and the expectations associated with their role.
5. **Scope Management**: The detailed WBS aids in effective scope management by clearly delineating project boundaries and preventing scope creep. It ensures that all required tasks are identified and included in the project plan.

4.1.5. Roadmap

The roadmap for the task is crafted as a strategic guide that outlines the key steps and deadlines essential for the task's success. Building on the detailed Work Breakdown Structure (WBS) development, the roadmap delineates a clear timeline that integrates all phases of the task. This structured plan ensures that each component of the WBS is executed in a timely manner, aligned with the overall objectives of the task. By adhering to this roadmap, the project team is equipped to navigate the task lifecycle efficiently, maintain focus on deliverables, and achieve the task goals systematically and within the defined schedule.

Here the roadmap:

1. **T2.5.2 Companies Partnership**
   a. January 2024: Definition of criteria and list of potential companies.

     b.   March 2024: Engage partner companies.
2. **T2.5.3 Employability Strategy**
     a.   April 2024: Develop employability strategy.
3. **T2.5.4 Alumni Network**
     a.   January 2024: Define community engagement.

Deliverable Milestones:

- **May 2024**: Deliverable consolidation.
- **June 2024**: Deliverable review.
- **30 June 2024**: Deliverable due date.
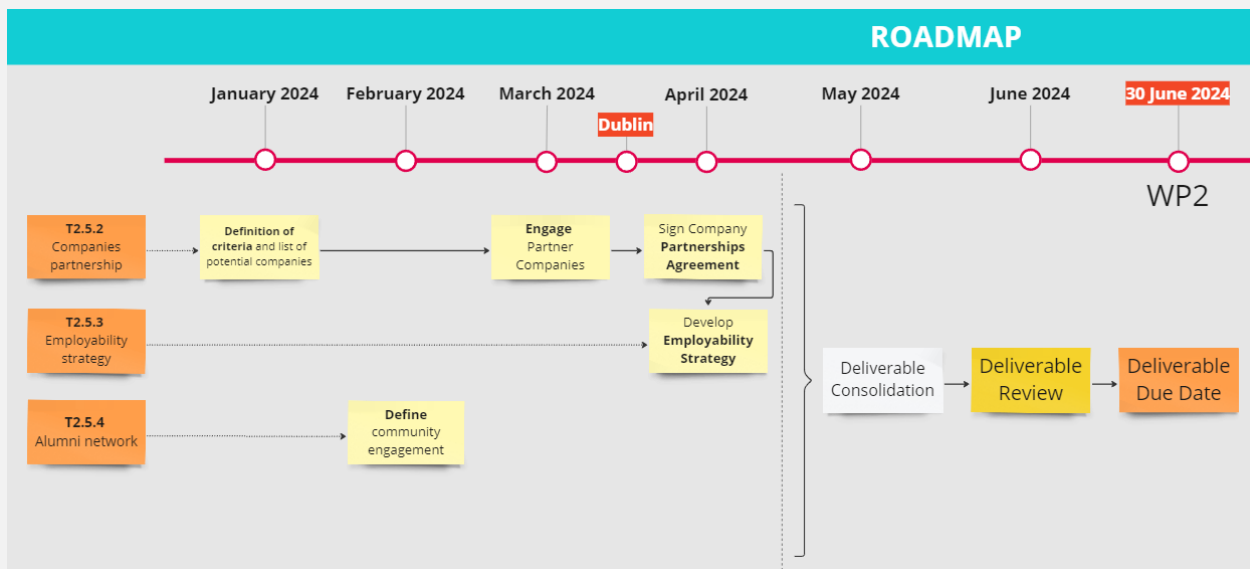
In the image above, the tasks and milestones are connected with arrows indicating the progression and dependencies between activities.

4.1.6. Relationship to other WPs and Tasks

The task T2.5 "Employability Strategy" serves as a foundational element within the broader context of our project, directly supporting and enhancing the objectives outlined in WP4, particularly tasks T4.7 and T4.3. This strategy aims to establish and nurture robust partnerships with companies, develop a comprehensive employability framework, and create an active alumni network. These efforts are crucial for the successful execution of work-based learning and employability programmes and student mentoring initiatives detailed in WP4.

CONNECTION TO WP4

Connection to T4.7 - Work-Based Learning and Employability Programme:

The employability strategy under T2.5 is designed to identify and engage potential partner companies, establish partnerships, and formalise agreements that will facilitate the implementation of T4.7. Specifically, the partnerships developed through T2.5 will provide the necessary industry connections and support to prepare and deliver short courses tailored for SMEs and companies, as outlined in T4.7. These courses will include individual modules from the master's programmes with micro-credentials, ensuring that business managers and leaders receive sector-specific training. Moreover, the employability strategy's alumni network will be instrumental in the deployment of work-based learning components, offering a pool of experienced graduates who can support both students and host companies/SMEs.

Furthermore, participating in networks and associations such as cyber experts' communities, ISACA Europe, and national CSIRTs and CERTs will be highly beneficial. This engagement will promote knowledge sharing, provide access to industry best practices, and foster collaboration with leading professionals in the field, thereby enhancing the future effectiveness and reach of the employability program.

Establishing a career center in collaboration with existing centers at our academic partners could be highly beneficial. Having a dedicated office will significantly enhance learners' employability prospects and localize the implementation of the employability program in different countries. This initiative will provide tailored support, resources, and opportunities to meet the unique needs of learners in each region, ultimately improving their career outcomes.

The employability strategy aligns with the goal of training a minimum of 1200 staff in companies via online modules by M48. The alumni network and industry partnerships established through T2.5 will provide a ready-made audience and support system for these online training initiatives. Additionally, the focus on developing best practices in Ireland and Italy will benefit from the strategic partnerships and structured engagement processes defined in the employability strategy.

Connection to T4.3 – Student Mentoring and Support by Industry Experts:

T2.5's development of an employability strategy and alumni network directly supports the student mentoring and support initiatives described in T4.3. By fostering relationships with industry experts and creating a dynamic network of alumni, the employability strategy will enhance the pool of available mentors for students. The defined partnerships with companies and industry leaders will ensure that a comprehensive panel of cybersecurity management experts is available, as required in T4.3.

The matchmaking tool facilitated by the Digital Learning Platform will benefit significantly from the robust alumni network and strategic partnerships cultivated through T2.5. Students will have access to a diverse range of mentors and real-world project opportunities, enhancing their learning experience and employability. This integration ensures that students can engage in joint projects and cybersecurity challenges, gaining practical experience and industry insights that are essential for their professional development.

CONNECTION TO WP5

Connection to T5.5 - Partnership Development Programme:

The outreach to companies can help support the work in T5.5 and vice versa. T5.5 is looking to engage companies (and other partners) to formally collaborate with the project and can consider activities such as organizing workshops for external contacts, offering mentoring opportunities and weekend tutoring. These opportunities can be offered to companies contacted under T2.5 as a means of ongoing engagement and to build trust and confidence in the D4S project, and at the same time familiarize them with the students and program. Likewise, companies contacted under T5.5 can also be introduced to the employment strategy and added to the pool of companies that graduates can contact for employment opportunities. The activities for both tasks can overlap and complement each other, creating a strong network of companies linked to the D4S master's programme and enthusiastic to engage with the students both during and after their studies.

CONNECTION TO WP6

Connection to T6.2 - Develop a Long-term Sustainability Strategy:

The integration of our employability strategy with Task T6.2, which focuses on developing a long-term sustainability strategy, is crucial for ensuring the ongoing success and expansion of our educational program. Task T6.2 aims to scale up the online programme to a European level, onboarding new Higher Education Institution (HEI) partners, and promoting the D4S model as a best practice for other joint master's programs. This task also involves creating a commercialisation plan and developing consortium contractual agreements to ensure financial sustainability. The commercialisation plan and financial sustainability aspects of Task T6.2 are closely linked to our employability strategy. By clearly articulating the benefits for companies involved in internships and mentoring activities, we create a compelling value proposition that supports revenue generation. Highlighting the access to skilled interns and potential hires as a key benefit for companies helps attract industry partners, which is crucial for the programme's financial sustainability. This strategy facilitates the creation of robust partnerships with industry, which can lead to sponsorships, collaborations, and financial contributions. Companies are more likely to invest in a programme that consistently delivers well-prepared graduates who meet their specific needs. By ensuring that the curriculum is aligned with industry demands and that internships are integrated seamlessly into the academic calendar, we enhance the appeal of the programme to potential corporate partners.

4.2. Industry Network Development – Methodology

4.2.1. Partner Engagement

The purpose of the following guidelines is to suggest an approach methodology for the activity and are therefore not mandatory. Each consortium partner may adapt them according to their own characteristics and specificities.

4.2.1.1 Activity Overview

Partner Engagement tasks aim to establish partnerships with companies within the network consortium that want to become involved in the programme on different levels such as:

- Recruiting students graduated from the Master's programme
- Buying short courses or micro-credential courses for their own employees
- Offering internships to Master's students
- Partnering to Master's programme offering support for Workshops and Mentoring (or other similar activities)

4.2.1.2 Methodology

To establish partnerships with interested companies, each partner of the consortium should:

- Define the target macro-areas (industries of interest)
- Analyse their network to identify target companies
- Contact the identified companies based on the previous analyses and the define methods

4.2.1.3 Definition of Target Macro-Areas

Target definition involves identifying the 'industrial sectors' by pinpointing the groups of companies that will then be considered in the next step of 'Companies Analysis,' from which the companies to be contacted will emerge.

The characteristics that must be considered to carry out the aforementioned activity are:

- High Priority sectors:
  Companies that, concerning the project objectives and specifications, could benefit from its educational outcomes due to their operations in closely related industrial sectors.

- Outgoing profiles (job titles):
  Companies interested in outgoing profiles due to their affinity with the industrial sector or the need for these types of professional profiles within specific departments, regardless of the operational industrial sector.

- Educational offerings of the project (full-time master, part-time master, short courses, micro-credential courses):

Companies potentially interested in purchasing the various products offered by the Master's programme for their employees.

- Programme-related activities:
  Companies interested and capable of actively participating in the program by offering support for internships and mobility activities (workshops, tutoring, etc.).

4.2.1.4 Companies Analysis

Starting from the macro-areas resulting from the 'Target Definition' process, analyse your network to identify companies to contact, subsequently dividing them into 'High Priority Companies' and 'Other Companies' in order to follow specific approaches based on the type.

The categorisation of identified companies will depend on their belonging to one or more of the target macro-areas. This analysis can be based on empirical data (such as belonging to a specific industrial sector), on information already in our possession and derived from consolidated business relationships, or through the sending of a dedicated survey to obtain evidence of genuine interest.

4.2.1.5 Strategy Approach

Based on the results from the previous analyses and considering the categorization of different companies into 'High Priority' and 'Others', the involved partners will proceed to

Step 1

- **Leverage your existing network**: Begin by brainstorming companies you know, have connections with, or have interacted with in the past. These could be potential beneficiaries of the program or organizations that share the project vision.
- **Industry focus**: Prioritize companies operating in high-priority sectors or companies that have demonstrated a high level of interest by responding to the survey.
  Additionally, consider targeting businesses of diverse sizes, from SMEs to large corporations.
- **"Other" companies**: Companies in your network operating in non-high-priority sectors but potentially interested in training on project short courses and micro-credentials courses or companies that have demonstrated a first interest by responding to the survey.

Step 2:

- **Reach out to identified high-priority companies**: Engage in initial conversations to understand their specific reasons for potentially participating in the program. This could involve phone calls, emails, or online meetings.
- **Reach out to "other" companies**: Sending a predefined email outlining general instructions on the program to gauge potential interest in the project. Schedule in-depth one-to-one meetings or a dedicated webinar with companies who confirm their interest.
- **Gather valuable insights**: By actively listening to their needs and challenges, you can tailor your approach and highlight how the Master's programme can address their concerns and contribute to their success.

Step 3:

- **Provide comprehensive materials**: For companies demonstrating a strong fit, share detailed program information, including curriculum, benefits, and potential impact on their organization.
- **Facilitate partnership discussions**: Engage in further discussions to address any remaining questions and finalize the partnership agreement.

Step 4:

- **Signing of the LOI (Letter of Interest-Annex 1):** Once the genuine interest of the companies met has been established, have them sign a preliminary, non-binding document that confirms their willingness to participate in the project.
- **Signing of the Agreement**

4.2.1.6 Documentation

To engage with interested companies and properly present the project and all relevant aspects, we suggest having the following documentation/information prepared before beginning the task:

- **COMPANIES ENGAGEMENT PRESENTATION**
  A brief presentation of the project that describes its philosophy, objectives, program, types of profiles, educational products, potential collaboration opportunities (internships, mentoring, workshops, tutoring, etc.), and highlights the benefits for companies.
- **SURVEY**
  To be sent to all companies in a partner's network to investigate potential interest in the project.
- **Master's Programme, Curricula and Outgoing Profiles**
  The complete course programme, relevant calendar, curricula, and the description of professional profiles that the Master's programme aims to create.
- **MASTER PARTICIPANTS REQUIREMENTS**
  Academic or knowledge basic requirements to participate to the Master's programme.

- **Short Courses and Micro-credential Structure and Programs**
  The description of the structure and organization of the different types of courses, along with the objectives in terms of technical skills acquisition that participants will achieve by completing the various modules.
- **Short Courses and Micro-credential Participants Requirements**
  Professional requirements to ensure uniformity of skills among participants in modules.
- **INTERNSHIP STRUCTURE**
  calendar, duration, compensation, constraints
- **MENTORING STRUCTURE**
  calendar, duration, constraints
- **LEGAL INFORMATION**
  Legal verification of the necessary requirements for the implementation of internships and other activities involving external companies and relevant Contractual agreements format.
- **Integration of Mobility Activities with Program/Calendar**
  Confirmation of collateral activities related to the training path (type, quantity, constraints) to integrate them into the collaboration proposal with interested companies, who may also be involved in such events with their internal staff.

4.2.2. Adecco Network Methodology

Step 1

Context Analysis: In 2022, the cybersecurity sector grew at twice the rate of the global economy. By 2023, its growth had accelerated to four times faster. Despite the overall increase in organizational investment in cyber resilience, rapid innovation and growth often result in uneven development.

In an evolving cybersecurity landscape marked by economic uncertainties, attracting and retaining cybersecurity talent is crucial for organizational success. The influx of emerging technologies into the digital ecosystem will continue to significantly increase the demand for skilled professionals. However, the current pool of available professionals is already insufficient, and the pipeline of new talent is alarmingly sparse. Year after year, more organizations find themselves without enough individuals possessing the necessary skills to achieve their cyber-resilience objectives.

In 2022, 6% of leaders reported that they were missing the skills and people they needed to respond to a cyber incident. In 2023, this doubled to 12%. This year, when asked whether their organization has the skills it needs to accomplish its cyber objectives, 20% said that they do not. Leaders who are unsure if they have the required skill sets also rose from 4% in 2022 to 11% this year.

To address these gaps, organizations are increasingly looking inward. While 33% of employers are still seeking to hire experienced cybersecurity professionals, the primary method for filling these roles is by upskilling existing employees, with 41% of organizations adopting this approach. In fact,

up to 91% of organizations are willing to invest in cybersecurity training and certification for their employees to enhance their skills.

Micro-credentials – certifications or short educational courses, rather than traditional university degrees – are one way to fill skills gaps and open up a new pipeline of talent for organizations[1].

Step 2

Analysis Of Macro-areas And Industry Sectors: Based on the economic context analysis, we conducted an in-depth study to identify the priority macro-areas, thereby defining the relevant industrial sectors of interest.

Industry Sector		
	Finance	
	Health	
	Law enforcement agencies	
	Digital/ICT	
	eCommerce	
	Energy	
	Utilities	
	Cybersecurity	
	Manufacturing	
	Sustainable and autonomous mobility	
	Legal services	
	Space	
	Transport	
	Agriculture	
	Military	
	Media and culture	
	Education - for teachers and trainers	
	Public Sector & Procurement	
Priority Areas		
	Smart Technologies & Systems	Companies developing Smart Systems
	Smart Technologies & Systems	Focus on problems related to Cybersecurity
	Sector with high value information	Focus on industries with high value data/information targets for cybersecurity
	Sector with high value information	Companies need to know the right questions
	Sector with high value information	Awareness of issues and solutions

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[1] Data and percentages reported in the WEF (World Economic Forum) document, "Global Cybersecurity Outlook 2024", January 2024

Step 3

Definition Of Approach Strategy: Once the industrial sectors were defined, we developed the approach strategy as follows:

1. Network analysis
2. Identification of companies to contact based on sectors and potential interest in the program's educational products, and the results of the surveys.
3. Segmentation of identified companies into two groups ('High Priority' and 'Others') based on their potential interest in the project.
4. Development of a dedicated contact strategy for the two groups of companies:
   o HIGH PRIORITY: Direct contact to introduce the programme's topics and organise detailed meetings or webinars depending on the number of companies.
   o OTHERS: Sending an exploratory email to introduce the programme's topics and arrange detailed meetings or webinars depending on the number of companies.
5. Participation in meetings/webinars, providing all necessary information and supporting documentation, and requesting the signing of a Letter of Interest (LOI) based on their actual interest in hiring program graduates, offering internship opportunities, supporting mentoring and workshop activities for the program participants, and purchasing short courses and micro-credential courses for their employees.
6. Sending documentation and contractual agreements related to the areas of interest indicated by the companies in the signed LOIs.
7. Signing binding contracts.

The analysis related to points 2 and 3 can be approached in different ways depending on the specifics of each partner. In the case of Adecco, given the in-depth knowledge of the needs of the companies in our network, an internal brainstorming session within the commercial division was sufficient to identify the high-priority companies.

Simultaneously, we coordinated the company's engagement activities at the project level by sharing the strategy and the specifically prepared documentation with all consortium partners and monitoring the progress.
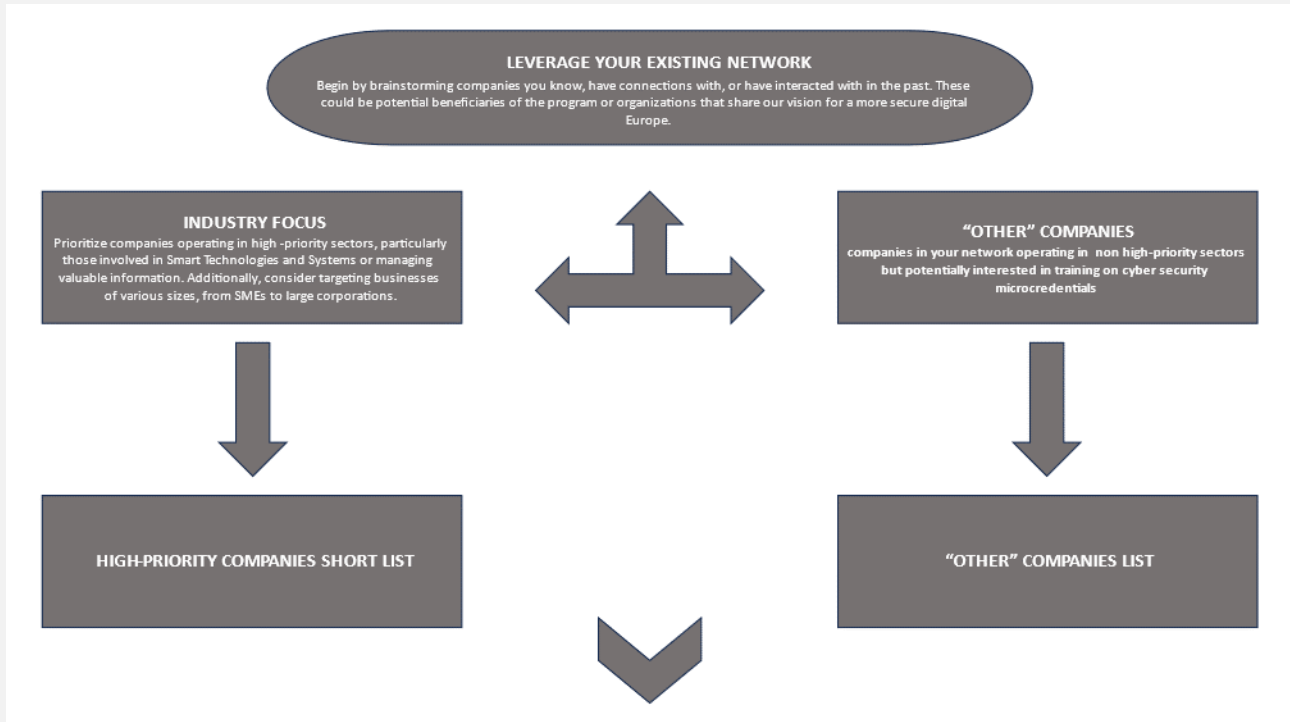
Step 4

Network Analysis: According to the strategy, we have identified and listed the companies to contact in the table below.

Company name	Company type	Industry Sector	Priority Areas
Company 1	Multinationals	Digital/ICT	Smart Technologies & Systems
Company 2	Multinationals	Space	Sector with high value information
Company 3	Multinationals	Digital/ICT	Smart Technologies & Systems
Company 4	Medium sized SMEs 100-250 employees	Cybersecurity	Smart Technologies & Systems
Company 5	Multinationals	Digital/ICT	Smart Technologies & Systems
Company 6	Multinationals	Health	Smart Technologies & Systems
Company 7	SMEs <10 employees	Digital/ICT	Smart Technologies & Systems
Company 8	Multinationals	Energy	Sector with high value information
Company 9	SMEs 10-100 employees	Digital/ICT	Smart Technologies & Systems
Company 10	Multinationals	Digital/ICT	Sector with high value information
Company 11	SMEs 10-100 employees	Digital/ICT	Smart Technologies & Systems
Company 12	Medium sized SMEs 100-250 employees	Pubilc Sector & Procurement	Sector with high value information
Company 13	Multinationals	Finance	Sector with high value information

Step 5

Contact Companies Directly: Given the project's progress and the partial availability of the necessary documentation to carry out the activities, we have decided to proceed by contacting only a limited number of particularly loyal companies. This decision was made with the aim of obtaining initial concrete feedback regarding the actual interest in this type of project. Specifically, we have engaged with companies in the digital field with a significant technological focus, particularly in the area of cybersecurity.

The meetings were conducted with the support of the project presentation, which included a general description, educational aspects, timelines, and benefits, as well as the draft of the Master's programme and curricula. This documentation was specifically created for the execution of this activity

The feedback has been very positive, and there is high interest in the project. As soon as we have all the necessary materials available to submit to the companies we met with, for a proper evaluation of all aspects related to the project, we will proceed with the next steps required for the signing of the LOI and any subsequent contracts.

The next step will be to contact, following the methodology described, all the other identified companies with the aim of reaching the KPI targets set by the project for the 'Companies Engagement' activity.

4.2.3. DigitalSME Network Methodology

DIGITAL SME began the engagement through filtering our database of general contacts to identify those who have an indicated interest in cybersecurity – this includes companies that are both cybersecurity providers and cybersecurity consumers, as well as associations which can serve as multipliers to reach out to both types of companies. The strategy of targeting cybersecurity consumers and providers allows the project to increase the scope of the companies that will be part of the engagement campaign and therefore attract a wider community. This is feasible as the profiles of the graduates relate to both sides of the market, and the short and micro courses can be relevant for cyber providers and cyber users.

Once this was done, an initial group of 100 companies were selected to pilot the first round of outreach activities (set out below). These companies were identified by sector and included in the list of contacts. The remainder of the companies will be treated in the same manner on an ongoing basis.

First round of Outreach.

The first round of outreach was based around a workshop that was intended to introduce the DIGITAL4Security project to interested parties and explain the purpose of the employability work.

However, this workshop was converted into a series of one-to-one meetings, as it was deemed that this would allow for a more bespoke approach to each company and create better opportunities to explore potential synergies between DIGITAL4Security and each company and receive feedback in turn.

The meetings were based around introducing the consortium and its goals, describing the types of courses and knowledge that would be provided, and introducing the different opportunities to engage, starting with the opportunity to connect with graduates and be part of the recruitment pool. Alongside this, other opportunities such as the partner development activities (mentioned in 4.1.2) were also discussed and positive respondents collected via a specialist mailing list, to be contacted for more future activities such as signing the letter of interest, participating in a micro course or hosting weekend talks etc.

Results of first round of outreach

So far DIGITAL SME have contacted 100 companies and currently have established further contact with 12 of them. This has so far led to three companies who have agreed to collaborate further with the project, including through participating in employment activities. The next step will be to introduce the Letter of Interest and solidify the engagement.

The initial piloting with the first group of companies has already provided several opportunities for improvement in the subsequent outreach. Firstly, it appeared that companies were positive about the potential for cybersecurity graduates and linking this to national context or strategy was beneficial. Secondly, highlighting the project partners (particularly the universities and companies involved) helped demonstrate the course's credibility. On the other hand, not all companies were familiar with the ENISA framework that the course profiles are based on (identified in figure 2 on page 3 of Part B of the Description of Action) so this required further explanation and clarification. Finally, while most companies were enthusiastic to be involved and expressed positive sentiments, the activities around the employability are still too far in the future to represent a concrete call to action for them. Therefore, offering other opportunities, or at the very least including them in a dedicated mailing list, was established as a way to ensure ongoing outreach and keep them aware of the project and potential collaboration opportunities, which goes hand in hand with T5.5.

Ongoing and Future Activities

DIGITAL SME will continue to leverage our network through several activities. As the project value proposition, calls to action and activities become more concrete, the curated list of contacts will be contacted in several tranches to present the engagement opportunities and gauge interest. This will be done in several rounds to allow lessons learnt in the previous round of engagement to be applied.

Alongside dedicated outreach around the activities for the employment strategy, DIGITAL SME will continue to promote via our website, including creating a signup list for interested parties, social media and dedicated mailings. Additionally, DIGITAL SME will initiate activities to engage additional

multipliers, extend our reach to companies beyond our network, and leverage other EU initiatives such as participation in relevant European Cybersecurity Community Support groups, The European Digital Skills and Jobs Platform and the Digital Large-Scale Partnership, among others.

4.3.   Career Development – Methodology

4.3.1. Alumni Network

The strategy employed to delineate the Alumni Network adhered to a collaborative approach. Following 50 hours of comprehensive desk research and analysis, examining the existing alumni support frameworks offered by leading European universities, and engaging in brainstorming sessions with university students and young professionals, the foundational steps for constructing the Alumni Network were delineated. Subsequently, a workshop was convened with the task's key stakeholders.

Facilitated by Adecco, the workshop, spanning a duration of one hour, engaged the co-leaders: BRNO UNIVERSITY and DIGITAL SME, totaling 7 participants. Utilizing a Miro Board featuring 7 discrete blocks, each posing a pertinent question aligned with the defined steps, participants were tasked with generating ideas for each block, including:

1. Network Objectives
2. Network Target Audience
3. Communication Strategy
4. Responsibility Matrix
5. Network Offerings
6. Utilized Tools
7. Key Performance Indicators (KPIs) and Projections

Following the completion of these steps, an additional block was allocated to solicit any additional considerations from the participants, encompassing potential risks, synergies with other WPs, and pertinent stakeholders to engage for refining the strategy.

Upon conclusion of the initial workshop segment, the proposed ideas were categorised into macro-themes, emphasising the salient points based on the frequency of mention and the sharing thoughts. Subsequently, a coherent foundational strategy was formulated, garnering unanimous agreement from all participants.

T2.5.4
Alumni Network
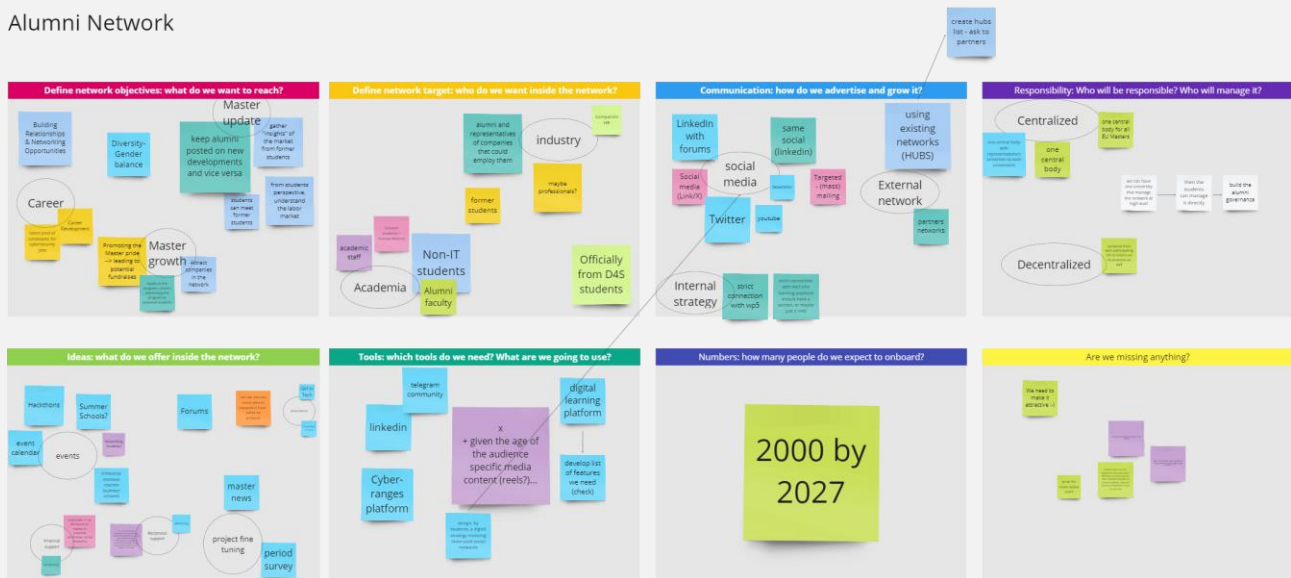
The ideas previously mentioned were cataloged on post-it notes, each affixed to its respective designated block. Following this, overarching themes were identified through the clustering of these ideas. Following the scheme presented above, the outcomes for each block is summarised in the following lines:

1. Network Objectives:
    The Network aims to improve the Master's programme by keeping it current with industry needs, strengthening its reputation, and helping students advance their careers through continual updates aligned with market demands, fortification of the program's reputation, and facilitation of students' professional advancement.

2. Network Target Audience:
    It targets **alumni**, **academic** partners, and **industry** partners, fostering knowledge exchange and a strong academia-industry connection.

3. Communication Strategy:
    A **multi-channel communication** strategy will be implemented. Social media (LinkedIn, Twitter, Youtube) will be used to connect and inform alumni and industry professionals. Collaborations with existing hubs and events to increase the network and gain expertise. In addition, collaboration with other **Work Packages** to enrich the program experience. Informative and engaging communication highlights alumni successes and promotes inclusivity. Two-way communication fosters strong relationships.

4. Responsibility Matrix:
    A **hybrid governance** model will be used. A **central body** oversees the Network development for the entire program, while **individual universities** establish their own governance structures. At the university level, students will manage the Network with a hierarchical structure. Senior students will develop country-specific strategies, and alumni will eventually transition to oversee recruitment (creating job opportunities for students).

Younger students will drive innovation and growth, with initial guidance from academic experts.

5. Network Offerings:
Activities within the network are categorised into **five** principal **areas**: events, associations, engagement initiatives, project refinement, financial assistance, and career development support. Projections indicate an anticipated enrollment of 2,000 students by 2027, with network performance evaluated based on various metrics, including mentoring sessions, event organised, participation rates, alumni association growth, hackathon involvement, newsletter subscribers, and more.
A notable emphasis emerged concerning inclusion, particularly regarding gender diversity and ethnicity. Strategies to encourage women's participation include sponsoring organisations such as "Women in Tech", mentoring showcasing female and multicultural role models in the field, and implementing targeted outreach initiatives.

6. Utilized Tools:
Social media, especially LinkedIn, will be used to attract members. Additionally, exploring tools like **cyber ranges** and interactive platforms is underway to enhance practical cyber skills learning.

7. Key Performance Indicators (KPIs) and Projections:
Success will be measured by factors like projected enrolment growth (2,000 by 2027), mentoring sessions conducted, event participation rates, and alumni association growth.

Furthermore, as the final "free" block facilitated, it is noteworthy to mention the establishment of connections with other work packages and EU-funded projects. This collaboration has facilitated engagement with other work package leaders, leading to the development of a more structured and comprehensive strategy.

5. Conclusions

In deploying the employability strategy within the context of the Digital4Security master's programme, our approach has underscored the need for comprehensive information and meticulous planning to ensure successful partnerships with industry stakeholders. Our interactions with various companies have revealed a keen interest in the programme. However, there is also a substantial demand for detailed information across several domains, including course structures, legal frameworks, mentoring logistics, and the integration of mobility activities.

Creating a comprehensive and effective employability strategy requires addressing the needs and requirements of the companies that will engage with students through internships, mentoring, and other collaborative activities. Based on the information gathered from these companies, we can develop best practices to ensure that both the educational institutions and the partnering companies benefit from these engagements. Below, we detail the best practices for various sections, ensuring that companies have the necessary information and resources to participate effectively and confidently.

Internship section

1 – Definition of All Courses for Each Training Path:

Companies need to understand the curriculum of the master to align their business goals with the skills and knowledge students are acquiring at the end of the programme.

- *Suggested Practice:* To develop an effective employability strategy, it is essential to have comprehensive, ready-to-use documentation of all courses, including detailed descriptions, objectives, and expected outcomes for both full-time and part-time master's programs. This documentation should be readily accessible to potential partner companies.
- *Rationale***:** Providing detailed course information helps companies identify the specific skills and competencies that students will develop during the programme. This enables companies to better match their needs with the talents emerging from the master's programme, facilitating smoother transitions into internships and employment.
- *Potential Risk*: Without a clear understanding of the master's programme, companies are less inclined to engage in partnerships. They may be hesitant to offer internships or hire graduates if they are unsure about the relevance and quality of the education provided. This can lead to reduced opportunities for students and a weaker employability strategy overall.

2 – Definition of Academic Requirements:

Companies require clarity on the academic standards for candidates to ensure that the students they might employ or interns will meet certain baseline qualifications.

- *Suggested Practice*: Clearly define and communicate the academic prerequisites for candidates, especially those coming from diverse academic backgrounds. This should include a breakdown of required prior knowledge and skills to ensure all participants meet a minimum standard.
- *Rationale***:** Companies need assurance that students have a solid academic foundation and the necessary baseline skills before committing to internships or employment. This transparency helps companies set realistic expectations and increases their confidence in the program's graduates.

- *Potential Risk*: Ambiguity in academic requirements can lead to mismatched expectations. Companies might receive interns or employees who do not meet their standards, leading to dissatisfaction and potential withdrawal from the partnership.

3   - Internship Calendar and Duration Based on the Program:

Companies need to know the high-level calendar of the courses, allowing them to plan for and integrate interns into their workflow effectively.

- *Suggested Practice*: Create a detailed internship calendar that outlines the duration, timing, and structure of internships, synchronized with the academic schedule. This calendar should include specific start and end dates, key milestones, and any periods when students are unavailable due to academic commitments.
- *Rationale***:** A well-structured internship calendar helps companies plan their workforce needs and allocate resources efficiently. By knowing when interns will be available, companies can better integrate them into ongoing projects and ensure that the internship period is productive for both the students and the organization.
- *Potential Risk*: Without a clear internship calendar, companies may face challenges in aligning their project timelines with the availability of interns. This can lead to underutilized interns, disrupted workflows, and a reluctance to participate in the program in the future. A lack of synchronisation between academic and internship schedules can result in missed opportunities for practical training and real-world experience for students.

4   - Internship Legal Regulations per Country:

Companies based in different countries have different needs in terms of legal procedures and documentation. Establishing a strong regulatory system between the consortium and the engaged companies is crucial to help companies navigate legal requirements, reducing the risk of legal issues and ensuring smooth implementation of internships in all the countries.

- *Suggested Practice*: Map (with the support of the project partners) and provide comprehensive legal information on internship regulations for each country involved, ensuring compliance with local laws. This should include guidelines on contracts, working hours, compensation, and any other relevant legal aspects.
- *Rationale*: Providing detailed legal guidelines helps companies understand and comply with local regulations, reducing the risk of legal complications. This ensures that internships are conducted in a legally sound manner, fostering trust and confidence among participating companies. Clear legal guidelines also help protect the rights of interns, ensuring fair treatment and a positive internship experience.
- *Potential Risk*: Without comprehensive legal information, companies may inadvertently violate local laws, leading to legal disputes, penalties, and damage to their reputation. This can discourage companies from participating in the internship program and limit opportunities for students.

Mentoring section

1   - Mentoring Structure and Calendar Based on the Program:

Providing companies with a framework to effectively mentor students is essential for the success of the mentoring activities.

- *Suggested Practice*: Design a structured mentoring programme with a clear calendar, outlining the roles and responsibilities of mentors and the expected outcomes of the mentoring process. This should include specific timeframes for mentoring sessions, key milestones, and feedback mechanisms.
- *Rationale*: A well-defined mentoring structure ensures that both mentors and students have clear expectations and objectives. This helps in creating a focused and productive mentoring relationship, where mentors can effectively guide students through their professional development. The clear calendar helps companies to plan

and allocate their resources efficiently, ensuring that the mentoring activities do not conflict with their primary business operations.

- *Potential Risk*: Without a structured mentoring programme and calendar, companies may face challenges in integrating mentoring activities into their workflow. This can lead to inconsistent mentoring experiences, reduced effectiveness of the mentoring process, and potential disengagement from both mentors and students. Lack of clarity and structure can also result in misaligned expectations and unmet objectives, reducing the overall impact of the mentoring program.

2 - Effort Required for Companies Involved in Mentoring Activities:

Helping companies plan and allocate resources effectively, while also providing clarity about any constraints, is crucial to ensuring their participation in mentoring activities without overextending themselves.

- *Suggested Practice*: Clearly articulate the effort required from companies participating in mentoring activities, including time commitment, resources needed, and expected outcomes. Additionally, identify and communicate any constraints or limitations, such as time restrictions, resource limitations, or specific requirements for participation.

- *Rationale*: Providing clear information about the effort required and potential constraints helps companies to assess their capacity and plan their involvement accordingly. This ensures that companies can participate in mentoring activities without straining their resources or overburdening their staff. By understanding the expected commitment and any limitations, companies can allocate the necessary time and resources, leading to a more effective and sustainable mentoring program.

- *Potential Risk*: Without clear articulation of the effort required and identification of constraints, companies may either overcommit or undercommit to mentoring activities. Lack of clarity about constraints can also create frustration and dissatisfaction among both mentors and students, negatively impacting the overall success of the mentoring activities.

Work based Learning and Mobility Activities section

Allowing companies to engage in and benefit from these activities enhances their involvement and potentially integrates their staff into workshops and events. Clearly outlining mobility and work-based activities helps companies understand how they can participate and benefit from these opportunities.

- *Suggested Practice*: Define the types, quantities, and constraints of mobility and work-based activities (e.g., workshops, company visits, hackathons, etc.) that are part of the training path. Integrate these activities into collaboration proposals with the employability strategy, ensuring that companies have a clear understanding of their involvement.

- *Rationale*: By clearly defining and confirming mobility and work-based activities, companies can better plan their participation and align these activities with their business goals. This helps in fostering deeper collaboration and engagement, as companies can see the direct benefits of participating in such activities.

- *Potential Risk*: Without a clear definition of mobility and work-based activities, companies may face uncertainty about their role and benefits, leading to lower engagement. This can result in missed opportunities for both students and companies, as well as potential logistical issues during the implementation of these activities.

Legal Considerations section

Addressing legal considerations is essential for reducing compliance risks and facilitating smoother collaboration with educational institutions.

1 – Contractual Agreements Formats:

Standardising contractual agreements simplifies the legal process, making it easier for companies to enter into agreements with educational institutions.

- *Suggested Practice*: Develop standardised contractual agreement formats tailored to each country's legal requirements. This streamlines the partnership process by providing clear and consistent terms of collaboration, making it easier for companies to understand and commit to agreements.

- *Rationale*: Standardised contractual agreements simplify the legal process, reducing the time and effort required to negotiate and finalize contracts. This makes it easier for companies to enter into partnerships with educational institutions, facilitating smoother and quicker collaborations. Clear and consistent terms of collaboration also ensure that all parties have a mutual understanding of their roles, responsibilities, and expectations, reducing the risk of misunderstandings and disputes.

- *Potential Risk*: Without standardised contractual agreements, the legal process can become cumbersome and time-consuming, deterring companies from entering into partnerships. This can lead to delays in the implementation of activities and reduced participation from companies. Inconsistent or unclear contractual terms can also result in misunderstandings and conflicts, negatively impacting the collaboration and the overall employability strategy.

Final conclusions

In summary, the implementation of an effective employability strategy hinges on clear communication, thorough documentation, and robust legal frameworks. The common elements across the various sections underscore the importance of detailed planning and transparent information sharing between educational institutions and partner companies. Key aspects include:

1. **Comprehensive Documentation:** Whether it is the definition of course structures or the legal regulations for internships, having detailed and accessible documentation ensures that companies can make informed decisions and align their goals with the educational outcomes.

2. **Structured Calendars and Schedules:** Clear timelines for internships, mentoring activities, and mobility events help companies plan their participation and integrate these activities into their operational workflows without disruptions.

3. **Legal Compliance and Standardization:** Providing comprehensive legal guidelines and standardised contractual agreements minimises compliance risks and simplifies the partnership process, fostering smoother collaborations and enhancing trust between companies and educational institutions.

4. **Resource Allocation and Clarity:** Clearly articulating the effort required from companies and identifying any constraints helps ensure that companies can participate effectively

without overextending their resources. This clarity promotes sustainable and meaningful engagement in mentoring and work-based learning activities.

Strategic Vision for Future Projects:

This deliverable's main goal is to provide a strategic framework that guides the current project and serves as a blueprint for future initiatives aimed at enhancing digital skills and employability. By establishing best practices and a detailed roadmap, we aim to create a replicable model that can be adapted to various educational contexts and industry needs. This approach will ensure that future projects can effectively engage industry partners, provide valuable training and employment opportunities, and ultimately contribute to the development of a skilled and resilient workforce.

This strategic vision emphasises:

- **Sustained Industry Collaboration**: Maintaining strong, ongoing relationships with industry partners to ensure the continuous relevance and improvement of training programs.
- **Adaptive Learning Models**: Continuously evolving the curriculum to incorporate emerging trends, ensuring that graduates remain at the forefront of the field.
- **Legal and Administrative Excellence**: Upholding rigorous legal and administrative standards to facilitate smooth and compliant partnerships and program implementations.

Work Package No/Name	WP2 Needs Analysis and Programme Design
Deliverable Name	D2.5 Employability Strategy
Partners involvement	Adecco
Submission Deadline (As per Annual Work Plan)	30-06-2024

Rate	1	2	3	4	5
Quality Parameter	very low/strongly disagree	low/dis agree	moderate/ neither nor	high/ agree	very high/strongly agree
1. The work performed corresponds to the requirements and methodological standards of the project.	☐	☐	☐	☐	☐
Insert text here...Insert text here...					
2. The drafting and structuring of each deliverable include the contribution of all relevant experts.	☐	☐	☐	☐	☐
Insert text here...Insert text here...					
3. Deliverables use clear and easily understandable language in the text and the design is professional and in line with the project brand identity, guidelines, and document template.	☐	☐	☐	☐	☐
Insert text here...Insert text here...					
4. The output is in line with the standards adopted by the European Commission.	☐	☐	☐	☐	☐
Insert text here...Insert text here...					
Name of the WP Leader	Matteo Martignoni				
Submission Date	[Publish Date]				

Legal Disclaimer

6. Annex 1: Letter of Interest.

Letter of Interest for Collaboration - Digital4Security Project

[Name of Contact Person]
[Role]
[Company Name]
[City, State, Zip]

REF: Letter of Intent for Collaboration - Digital4Security Project

Dear [Name of Contact Person],

I'm writing this letter to show the strong support of [Your Company Name] for the Digital4Security Project. We as [Your Company Name] are aligned in the project mission of a secure digital future for Europe and committed in sharing our expertise to address the critical skills gap in cybersecurity.

The innovation pursued by Digital 4 Security perfectly aligns with the strategic vision of [Your Company Name]. Indeed, [Your Company Name] is a leading company in the [XXX] field and it is concerned with [ADD SOME DESCRIPTION OF THE ACTIVITIES/BUSINESS]. The interest of [Your Company Name] in Cybersecurity relies in [ADD SOME DESCRIPTION ABOUT HOW ORGANIZATION PLANS TO EXPLOIT D4S project].

The Digital4Security Project's vision of creating a market-driven European Master's programme in Cybersecurity Management & Data Sovereignty directly addresses the growing threats faced by our business. We are particularly interested in collaborating in the following areas: [delete items that are not affected]

- **Student Recruitment/internships:** We see immense value in supporting the program's objective of training over 2,500 graduates during the next four years. By offering internship and recruitment opportunities to these highly skilled graduates, we can contribute to building a robust pipeline of cybersecurity professionals ready to address the evolving challenges faced by European industries.
- **Upskilling Our Workforce:** The ever-changing cybersecurity landscape necessitates continuous learning. We are enthusiastic about the program's focus on market-led curriculum and its ability to provide our existing employees with the latest cybersecurity expertise. This aligns with our objective to become a "Cyber Confident" organization with robust defenses against cyber threats.
- **Industry Expertise and Mentorship:** Our team boasts a wealth of experience in the cybersecurity field. We are excited to contribute to the program by:
    - Participating in the development of the curriculum, ensuring it incorporates real-world industry needs and reflects best practices in cybersecurity management.
    - Providing senior cybersecurity experts as mentors, offering invaluable guidance and support to program participants, helping them translate theoretical knowledge into practical application.
    -

Therefore, [Your Company Name] is eager to collaborate with the Digital4Security project in the ways outlined above. We strongly believe that this partnership will be mutually beneficial, empowering both our company and the program to achieve its ambitious goals.
[THIS CAN BE CUSTOMIZED ACCORDING TO THE TYPE OF SUPPORTING PARTNER AND ITS ACTIVITIES]

Best regards,
[SIGNATURE]