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Digital Europe Programme

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Deliverable D3.1 – Assessment of Training Needs and Requirements

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1. Summary

Within the **Digital Europe Programme (DEP)**, a **European Digital Innovation Hub (EDIH)** is defined as a strategic "one-stop shop" designed to help companies and public sector organisations respond to digital challenges and become more competitive. These hubs integrate technical expertise with "test before invest" facilities, training, and financing advice, serving as regional catalysts for the adoption of advanced technologies like Artificial Intelligence, Cybersecurity, and High-Performance Computing.

The **Digital Innovation Gateway for Kosovo (DIG-4K)** represents Kosovo's official entry into this pan-European network, being country's 1st EDIH. Co-financed by the **European Union** and the **Government of Kosovo**, this 48-month initiative is coordinated by the **Innovation and Training Park (ITP) Prizren**. DIG-4K aims to harness digital transformation across the region by empowering local businesses, educational institutions, and public stakeholders through an integrated ecosystem of innovation and expert support.

The project is implemented by a specialized consortium of seven partners, with **Cactus Education** serving as the lead beneficiary for **Work Package 3 (WP3) – Digital Skills Academy**. As an ICT pioneer and an accredited provider of professional high school education in Kosovo, Cactus Education brings deep industry expertise in developing vendor-based certifications and certified training modules. In its leadership capacity, Cactus Education oversees the design of the project's digital skills ecosystem, ensuring that all training outputs are aligned with industry standards and the evolving needs of the local labor market.

Deliverable D3.1 – Assessment of Training Needs and Requirements serves as the **empirical foundation** for the project's capacity-building strategy. In strict alignment with the project's Description of Action, this report provides a data-driven analysis of the specific digital skills gaps currently hindering the competitiveness of MSMEs and public sector organisations in Kosovo.

Key components of this deliverable include:

- **In-depth Competency Mapping:** An analysis of existing digital literacy levels and the identification of critical shortages in high-impact areas such as **Data Analytics, Artificial Intelligence, and Cybersecurity**.
- **Segmented Insights:** Data is segmented by industry, region, and business size to ensure that future interventions are not "one-size-fits-all" but are tailored to specific sectoral demands.
- **Strategic Evidence Base:** The findings establish the necessary requirements for the subsequent **Digital Skills Curriculum (D3.2)**, ensuring that training programmes are modular, business-oriented, and capable of driving tangible digital adoption.

This report is a vital resource for stakeholders and policymakers, providing the evidence needed to design a workforce upskilling and reskilling framework that meets the demands of a rapidly evolving digital economy.

During **May 2026**, a comprehensive **Needs Assessment Survey** was conducted under Work Package 3 (WP3) of the DIG-4K Project to identify digital skills gaps and training requirements across **micro, small and medium enterprises (MSMEs), educational institutions, and public sector organizations in Kosovo**.

The survey was led by Cactus Education and widely disseminated through a strong network of project partners and stakeholders, including **STIKK** (Kosovo Association of Information and Communication Technology – representing ICT companies and supporting digital innovation), **OEGJK** (German-Kosovo Chamber of Commerce – facilitating business cooperation and investment between Kosovo and Germany), **OEK** (Economic Chamber of Kosovo – representing a broad range of private sector businesses), **SHDPK** (Kosovo Wood Processors Association – supporting the wood processing and manufacturing industry), **AKB** (Kosovo Business Alliance – a network advocating for the interests of local businesses), as well as public institutions via the **Ministry of Digitalization and Public Administration**. Additional outreach was conducted through the **ITP Prizren** website and social media platforms, DIG-4K landing page and social media platforms, project partners social media platforms, and direct email communication, ensuring broad participation and representation across sectors.

The questionnaire consisted of **23 structured questions** (multiple choice, scaled, and open-ended), designed to capture:

- current digital competencies
- training needs and priorities
- preferred training formats
- barriers to participation
- expected outcomes from training programs

A total of **82 organizations** responded, providing valuable insight into the current state of digital skills and readiness for digital transformation in Kosovo.

2. Key Findings

The results highlight that the majority of respondents are **micro and small enterprises**, reflecting the dominant structure of Kosovo's economy. While a significant proportion of organizations have participated in digital training in recent years, notable gaps remain, particularly at **intermediate and advanced skill levels**.

The assessment identified **strong demand for practical, application-oriented training** in areas such as:

- data analytics
- digital marketing
- cybersecurity

- cloud computing
- automation and emerging technologies

The preferred delivery approach is **hybrid training (combining in-person and online formats)**, allowing flexibility and accessibility. The main barriers to participation include:

- limited time availability
- cost constraints (addressed by the project's free training model)
- limited organizational capacity

Participants expressed clear expectations for **tangible outcomes**, including increased productivity, enhanced operational efficiency, and improved digital competitiveness.

3. Contribution to WP3 Objectives

The findings of this assessment directly support the core objective of **WP3 – Digital Skills Academy**, which aims to address the digital skills gap through the design and delivery of a **comprehensive, tailored training program**.

Specifically, Deliverable D3.1 provides:

- a **baseline of digital competencies** across target groups
- identification of **critical skill shortages**
- segmentation of needs by organization type and size
- evidence-based insights for **curriculum development and training design**

4. Profile of Respondents

The organizations participating in the survey represent a broad geographical coverage across Kosovo, ensuring that the findings reflect the needs and priorities of different economic regions.

Key Insight:

The strong representation from both the Prishtina and Prizren regions, complemented by participation from other regions, provides a balanced national perspective on digital skills needs. This geographic spread confirms that demand for digital upskilling is not limited to major urban centres but exists across Kosovo, supporting the need for accessible, hybrid, and scalable training programmes capable of reaching beneficiaries throughout the country.

a. Company Size

- Micro (1–10 employees): 33 (40%)
- Small (11–30): 24 (29%)
- Medium (31–100): 14 (17%)
- Large (100+): 11 (13%)

Key Insight:

Approximately **69% of respondents are micro and small enterprises**, indicating that training programs must be:

- practical
- cost-efficient
- flexible

b. Sector Representation

The sample includes a **diverse range of sectors**, including:

- ICT
- manufacturing
- services
- agriculture
- public sector

Key Insight:

Training programs must be **cross-sectoral**, modular, and adaptable to different industry needs.

5. Current Digital Training Exposure

- **65% (53 organizations)** have conducted digital training in the past 2 years
- **35% (29 organizations)** have not

Interpretation:

- Moderate level of awareness and engagement
- A significant group still requires **initial digital transformation onboarding**

6. Training Needs Analysis

a. Required Training Levels

- Intermediate: 44%
- Advanced: 23%
- Combined levels: 23%
- Beginner: 10%

Key Insight:

Demand is concentrated on **intermediate and advanced skills**, signaling a shift toward **applied, specialized competencies** rather than basic digital literacy.

b. Urgency of Training

- Medium urgency: 63%
- High urgency: 27%
- Low urgency: 10%

Interpretation:

Training is **strategically important**, though not always urgent. Engagement depends on **clear demonstration of value and impact**.

7. Training Delivery Preferences

a. Preferred Format

- Hybrid: 40%
- In-person: 32%
- Online (live): 24%
- Self-paced: 4%

Key Insight:

- Hybrid learning is strongly preferred (flexibility + interaction)
- Very low demand for self-paced learning indicates need for **guided, interactive formats**

b. Time Commitment

- Majority: 2–4 hours/week
- Some: 4–8 hours/week

Implication:

Training should be:

- modular
- delivered in short sessions (2–3 hours)

c. Scheduling Preferences

- Preference for weekdays (especially mid-week)
- Split between morning and afternoon sessions

Implication:

Offer **parallel cohorts (morning and afternoon)**

8. Key Barriers to Training

Main barriers identified:

1. Lack of time
2. High cost of training
3. Limited staff availability
4. Lack of structured materials
5. Unclear benefits

Critical Insight:

The DIG-4K project directly addresses the **cost barrier**, while remaining barriers require:

- organizational flexibility
- better communication of benefits

9. Motivation & Expectations

a. Employee Motivation

- Generally **motivated or highly motivated**

Indicates strong potential for **high participation rates**

b. Expected Outcomes

Organizations expect:

- Increased productivity
- Improved practical skills
- Stronger organizational capacity
- Support for digital transformation

Interpretation:

Demand is focused on **tangible, business-oriented outcomes**

10. Key Findings Summary

The needs assessment identified several clear trends regarding digital skills development and training requirements among MSMEs, educational institutions, and public sector organizations in Kosovo. The findings reveal not only the current level of digital readiness but also the preferred approaches for future capacity-building initiatives. Overall, respondents demonstrated a strong awareness of the importance of digital transformation, while highlighting practical constraints that need to be considered during the design and delivery of the Digital Skills Academy.

Key Findings

SMEs dominate participation

The majority of respondents were micro and small enterprises, reflecting the overall structure of Kosovo's economy. This finding emphasizes the importance of designing training interventions that are accessible, practical, and directly applicable to the operational needs of small businesses.

Strong demand for intermediate and advanced skills

The survey results indicate that organizations are moving beyond basic digital literacy and increasingly require more specialized competencies. Demand is particularly high for applied digital skills that support productivity, data-driven decision-making, process optimization, and digital transformation.

Hybrid learning is the preferred format

Most respondents expressed a preference for combining face-to-face and online learning. This approach offers flexibility while maintaining the interaction, networking, and practical support that participants value.

Time constraints are the main barrier

Lack of time was identified as the most significant challenge preventing staff from participating in training programs. This finding highlights the need for short, focused learning sessions that can be integrated into regular work schedules.

Practical, outcome-driven training is essential

Organizations are primarily interested in training that produces immediate and measurable benefits. Participants prefer practical exercises, real-world case studies, and skills that can be directly applied in their work environment.

Motivation is high but requires clear value communication

Employees are generally willing to participate in digital skills development activities; however, organizations need a clear understanding of the expected benefits, business impact, and return on investment before committing resources and staff time.

11. Recommendations for DIG-4K Training Programs

a. Program Design

To accommodate varying levels of digital maturity and ensure progressive learning pathways, the Digital Skills Academy should adopt a structured training framework that caters to different knowledge and experience levels.

Recommended Training Tracks

- Beginner
- Intermediate (core focus)
- Advanced

Recommended Focus Areas

- Data analytics
- Digital tools for business
- Automation and Artificial Intelligence
- Cybersecurity
- Digital marketing

b. Training Format

Respondents demonstrated a strong preference for training formats that combine flexibility with interaction and hands-on support. Training should therefore provide opportunities for both online participation and face-to-face engagement.

Recommendations

- Adopt a hybrid model (50% online, 50% in-person)
- Avoid purely self-paced learning formats

c. Structure and Duration

Given the limited time availability reported by many organizations, training programmes should be concise, modular, and designed to minimize disruption to daily operations while maintaining learning effectiveness.

Recommendations

- Sessions of 2–3 hours
- Programme duration of 4–6 weeks

Learning Components

- Practical assignments
- Real case studies
- Recorded learning materials

d. Participation Strategy

Increasing participation requires addressing organizational barriers while clearly communicating the benefits of training to both employers and employees.

Recommendations

- Flexible scheduling options
- Multiple parallel cohorts
- Clear communication of expected impact and business value

e. Certification and Incentives

Recognition of acquired skills is an important motivating factor for participants and employers. Certification mechanisms can increase engagement and demonstrate the practical value of training.

Recommendations

- Certificates of completion
- Digital badges and micro-credentials
- Case-based projects
- Mentoring and coaching support

f. SME-Focused Approach

As SMEs constitute the largest target group, training content should be specifically adapted to their operational realities, resource limitations, and business priorities.

Recommendations

- Simple and practical learning materials
- Immediate business applications
- Focus on productivity improvement and automation

g. Engagement Strategy

Long-term sustainability and wider reach can be achieved through collaboration with ecosystem stakeholders that already support businesses and public institutions.

Recommendations

Strengthen cooperation with:

- Business associations
- Chambers of commerce
- Municipalities

Use:

- Success stories
- Testimonials
- Demonstration cases to increase trust and awareness.

12. Training Curriculum Framework

Based on the survey findings, a multi-level curriculum structure is recommended to address the varying levels of digital maturity among participants while supporting progressive skills development.

a. Beginner Track

The beginner track targets organizations and individuals with limited digital experience and focuses on establishing a strong digital foundation.

Modules

- Digital literacy
- Cloud tools
- Cyber hygiene
- Basic data skills

b. Intermediate Track (Core Focus)

This track addresses the needs of the largest group of respondents and focuses on practical digital competencies that can directly improve organizational performance.

Modules

- Data analytics (Excel, Power BI)
- Digital marketing
- Process automation
- Cybersecurity

Learning Approach

- Hands-on exercises
- Real business case studies
- Problem-solving activities

c. Advanced Track

The advanced track supports organizations that are further along their digital transformation journey and seek specialized expertise and strategic capabilities.

Modules

- Artificial Intelligence for business
- Advanced analytics
- Digital transformation strategy
- Project management

Capstone Component

- Development of a digital transformation roadmap

13. Delivery Model

The delivery model should be directly aligned with participant preferences identified through the survey and designed to maximize accessibility and completion rates.

Recommended Delivery Model

- Hybrid training format
- Sessions lasting 2–3 hours
- Programmes lasting 4–6 weeks
- Weekly commitment of 2–4 hours
- Morning and afternoon cohorts

This approach balances flexibility, interaction, and practical engagement while accommodating the operational realities of participating organizations.

14. Implications and Recommendations

The findings of this needs assessment provide a strong evidence base for the development of the Digital Skills Academy under WP3. The identified skill gaps, training preferences, and barriers should directly inform curriculum development, delivery methods, and participant engagement strategies.

Key Recommendations

- Develop modular and flexible curricula tailored to MSMEs, educational institutions, and public sector organizations.
- Prioritize intermediate and advanced digital skills development.
- Implement a hybrid delivery model that combines online and in-person learning.
- Emphasize hands-on, practical, and workplace-oriented training methodologies.
- Establish certification pathways aligned with industry standards and labour market needs.

- Apply micro-learning approaches through shorter learning units and flexible scheduling.
- Provide recorded sessions to support self-paced revision and accessibility.
- Incorporate real business cases, simulations, and practical exercises in all training tracks.
- Supply participants with ready-to-use templates, tools, guides, and learning resources to facilitate implementation of acquired skills within their organizations.

These measures will ensure that the Digital Skills Academy effectively addresses identified needs and contributes to enhancing digital maturity, competitiveness, and innovation capacity across Kosovo.

15. Conclusion

Deliverable D3.1 provides a **robust evidence base** for the design of the Digital Skills Academy under WP3. The insights generated ensure that future training programs are **relevant, demand-driven, and aligned with market needs**, thereby contributing to **digital transformation, workforce development, and increased competitiveness** of organizations in Kosovo.

The assessment confirms that organizations in Kosovo are:

- Aware of the importance of digital transformation
- Motivated but constrained by time and resources
- Actively seeking practical, flexible training

The DIG-4K project is therefore well positioned to:

- eliminate financial barriers
- deliver high-impact, practical skills
- accelerate digital transformation across sectors

16. Annexes

The deliverable will be complemented by a set of annexes providing detailed supporting data and visual evidence. These include the **Annex 1: Questionnaire**, **Annex 2: Needs Assessment Results** exported from the Microsoft Forms survey tool in Excel format, offering the full dataset of responses collected, as well as **Annex 3: Dashboards and Charts** developed based on this data, which present key findings in a visual and accessible format to support analysis, interpretation, and decision-making.



Annex
1_Questionnaire.pdf



Annex 2_Needs
Assessment Results. 3_Dashboards and C



Annex

Annex 1- Questionnaire

Questionnaire Description

To support the development of the Digital Skills Academy under WP3, a structured **Needs Assessment Questionnaire** was designed and implemented during May 2026. The questionnaire consisted of **23 questions**, combining multiple-choice, rating-scale, multiple-selection, and open-response formats to gather both quantitative and qualitative insights from participants. It was developed to assess the current level of digital skills, previous training experience, priority skill gaps, preferred training topics, delivery formats, barriers to participation, and expected outcomes from future digital skills programmes.

The questionnaire targeted **micro, small and medium-sized enterprises (MSMEs), educational institutions, and public sector organizations** across Kosovo. The information collected provides a comprehensive overview of digital training needs and serves as the foundation for the design of the DIG-4K Digital Skills Academy curriculum, training pathways, and delivery model. By aligning future training activities with the needs identified through the survey, the project aims to ensure the relevance, effectiveness, and long-term impact of its capacity-building interventions.

1. Emri i institucionit/kompanisë: Freeform field, fill in text...
2. Sektori i aktivitetit (fushëveprimi): Freeform field, fill in text...
3. Numri i punonjësve/punësuarve:
4. A kanë ndjekur stafi i juaj trajnime digjitale në 2 vitet e fundit?
5. Nëse po, në cilat fusha janë trajnuar? (Zgjidhni të gjitha që aplikohen)

No	Options
1	Aftësi bazike digjitale
2	Marketing digjital
3	TIK & teknologji
4	E-commerce
5	CyberSecurity/Siguria Kibernetike
6	Data analytics/Analiza e të dhënave
7	Trajnime të tjera (shkruani me poshtë):
8	Other

6. Sa shpesh ka financuar kompania/institucioni juaj trajnime për stafin?

No	Frequency
1	Rregullisht (3+ herë/vit)
2	Herë pas here
3	Vetëm raste specifike
4	Asnjëherë

7. Kush ka paguar për këto trajnime?

No	Options
1	Vetë kompania
2	Punonjësit
3	Projekte/donatorë
4	Kombinim
5	Të tjera (shkruani me poshtë):
6	Other (free text field)

8. A kryeni vlerësim të aftësive të stafit përpara organizimit të trajnimeve?

No	Option
1	Po
2	Jo

9. A ekziston një plan formal/zyrtar i zhvillimit profesional në kompani/institucion?

No	Option
1	Po
2	Jo

10. Kur implementoni zgjidhje të reja digjitale, si i angazhoni punonjësit?(Zgjidhni të gjitha që aplikohen)

No	Options
1	Informim dhe rritje të ndërgjegjësimit
2	Komunikim transparent i planeve të digjitalizimit
3	Matje të gatishmërisë së stafit për të ndjekur trajnimet
4	Përfshirje në dizajn&testim
5	Trajnime të dedikuara për përdorimin e teknologjive
6	Nuk realizojmë asnjërën nga këto

11. Plani formal/zyrtar i zhvillimit profesional në kompani/institucion është i zhvilluar për periudhën:

No	Duration
1	1 vjeçare
2	3 vjeçare
3	5 vjeçare

12. Cilat janë fushat kryesore ku stafi juaj ka nevojë për trajnime?
(Zgjidhni të gjitha që aplikohen)

No	Option
1	Aftësi bazike digjitale
2	Produktivitet digjital (Word, Excel, menagjim i fajllave)
3	E-commerce & Website management (menagjim i Ueb faqeve)
4	Marketing digjital
5	Menaxhimi i rrjeteve sociale (Social media management)
6	Siguria Kibernetike (Cybersecurity)
7	Analiza e të dhënave (Data analytics)
8	Teknologjitë Cloud (Cloud computing)
9	Veglat AI dhe Automatizimi (AI tools & automation)
10	Menaxhim projektsh
11	CRM / ERP-përdorimi i këtyre platformave
12	Të tjera (shkruani me poshtë):
13	Other

13. Cilat nivele ose pozita të stafit tuaj kanë nevojë për trajnime?
(Zgjidhni të gjitha që aplikohen)

No	Option
1	Staf operacional/administrativ
2	Punonjës fillestar/junior
3	Staf Teknik (IT)
4	Marketing digjital
5	Menaxher ekipesh/menaxher te nivelit të mesëm
6	Drejtues departamentesh
7	Menaxhment i lartë/pozita ekzekutive
8	Të gjitha nivelet
9	Të tjera (shkruani me poshtë):
10	Other

14. Cili është niveli i trajnimeve që nevojitet për stafin tuaj?

No	Option
1	Fillestar
2	Mesatar
3	Avancuar
4	Kombinim i niveleve

15. Sa urgjente janë këto trajnime për organizatën tuaj?

No	Option
1	Shumë urgjente
2	Mesatare
3	Jo urgjente

16. Cili është numri i punonjësve që do të dërgonit për të ndjekur trajnime?

No	Option
1	1
2	2-3
3	4-6
4	7-10
5	10+

17. Cili format është më i përshtatshëm/preferoni për të ndjekur trajnimet?

No	Option
1	Në klasë (fizikisht)
2	Online (live)
3	Hybrid (kombinim në klasë dhe online)
4	Self-paced (materiale VIDEO / MOODLE)

18. Sa kohë mund të dedikojë stafi juaj për trajnime çdo javë?

No	Option
1	<2 orë
2	2–4 orë
3	4–8 orë
4	8+ orë

19. Cilat ditë të javës janë më të përshtatshme për të ndjekur trajnimet?
(Zgjidhni të gjitha që aplikohen)

No	Option
1	E hënë
2	E martë
3	E mërkurë
4	E enjte
5	E premte
6	Fundjavë (Shtune dhe Diel)

20. Cili orar është më i përshtatshëm?

No	Option
1	Paradite
2	Pasdite
3	Mbrëmje

21. Cilat janë barrierat kryesore që ju pengojnë të ndiqni trajnime?

No	Option
1	Mungesa e kohës
2	Kosto e lartë e trajnimeve
3	Mungesa e stafit të lirë/në dispozicion
4	Mungesa e materialeve
5	Mungesa e pajisjeve/teknologjisë
6	Përfitime të paqarta nga trajnimi (objektivat e paqarta)

22. Sa të motivuar janë punonjësit tuaj për të ndjekur trajnime digjitale?

No	Option
1	Shumë të motivuar
2	Të motivuar
3	Mesatarisht të motivuar
4	Pak
5	Aspak

23. Çfarë rezultati prisni nga programet e trajnimit të organizuara nga Projekti DIG-4K?

(Zgjidhni deri në 3 opsione)

No	Option
1	Rritje të produktivitetit
2	Rritje të aftësive praktike
3	Digjitalizim të proceseve
4	Forcim të kapaciteteve menaxheriale
5	Certifikim profesional
6	Rritje të shitjeve/performancës së biznesit
7	Automatizim procesesh/të punëve të brendshme