Cross-fertilization of industrial ecosystems in textile manufacturing and construction leveraging digital and advanced technologies to build up green and digital resilience in Europe.

EXECUTIVE SUMMARY

This policy paper presents key insights from a transformative three-year project designed to empower Small and Medium-sized Enterprises (SMEs) across the European Union. **With increased market volatilities, SMEs are being exposed to business challenges on daily basis. They not only have to survive for the day but live to compete for the next day by investing in resources. Business innovation and agility have been the key drivers which facilitate SMEs to remain afloat and compete**. However, to experiment, explore and implement innovative ideas, SMEs need finance and focused one-to-one support; especially for market expansion.

xBUILD EU project focused on three key sectors: Textiles, Construction, and Advanced Manufacturing, **with the goal of identifying and supporting innovative solutions that leveraged cross-sector and cross-border collaborations**. By encouraging the spread and adaptation of **best industrial practices traditionally limited to one sector**, the initiative aimed **to stimulate the development of innovative ideas** that could pollinate across regions and sectors, helping SMEs access the resources, skills, and networks needed to thrive in a highly competitive and increasingly interconnected market.

Cross sector and cross border promotional business innovative ideas of SME projects across EU were **competitively selected** and financial support was extended to implement projects within duration of four months. With a total budget of **1.05 million euros** allocated through cascade funding, 45 SMEs got directly funded to implement innovative product/service ideas and explore Internationalisation opportunities. Overall, **over 100 SMEs across EU region** got benefitted from the program through participation in webinars and pilot projects, including focused project implementation support.

The results and achievements have been outstanding; especially considering the cross sector and cross border impact. **At the core of this initiative was the recognition that cluster collaboration, bringing together diverse actors across sectors and borders, is an effective enabler for** tangibly supporting SMEs from different sectors to openly discuss business challenges, cost effective solutions and brain storm cross sector applications. A detailed mapping of educational institutions and training courses for skill development in focus sectors across Project partner regions provided a comprehensive understanding of the current skill landscape, while a skill gap analysis identified areas requiring intervention. These findings were complemented by Quadruple Helix workshops conducted at each Partner region, which brought together businesses, academia, governments, and civil society to identify region-specific challenges and co-develop practical solutions towards addressing key value chain constraints.

The purpose of this paper is to share the **outcomes, lessons learned, and actionable recommendations** from the project, emphasizing the importance of **expanding cascade funding, strengthening cluster-driven cooperation, and investing in SME skills development**. The findings are particularly relevant for **Policy Officers and decision-makers** shaping future EU funding frameworks, ensuring that upcoming policies effectively support SMEs' innovative projects through **industrial clusters**, enhance **European industrial competitiveness**, and align with the EU's **green and digital transition goals**. In light of these insights, this paper **encourages stakeholders—including regional governments, Policy Officers, and public agencies—to further strengthen cluster-based financial models** that address cross-sector and cross-border challenges, reinforcing SME **competitiveness, resilience, and contribution to Europe's economic and social objectives**.

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INTRODUCTION

Background and context

Small and medium-sized enterprises (SMEs) form the backbone of the European economy, employing approximately 100 million people and contributing over half of Europe's GDP. Despite their critical role in driving economic growth and innovation, SMEs face mounting challenges, particularly in adapting to the dual green and digital transitions, more so when they are striving all alone to look around for hand holding, support and guidance for expansion, funding and matchmaking. The construction and textile industries, in particular, highlight the urgent need for transformation. **Construction and demolition waste (CDW) is the largest single waste source in the EU, accounting for 42% of all waste generated. Recycling rates remain low, with most EU countries recycling only about 50% of their CDW, despite projections that waste volumes will reach 570 million tons per year by 2030**. Similarly, **the textile industry—responsible for the fifth-highest greenhouse gas (GHG) emissions among industrial sectors—faces immense pressure to reduce its environmental footprint. Currently, less than 1% of all textiles globally are recycled into new textiles**. To enhance productivity and competitiveness, these industries must also embrace Industry 4.0 technologies, such as IoT, AI/ML, and big data analytics. Importantly, they also support the shift toward more circular and sustainable industrial practices.

Project overview

xBUILD-EU focused on building an EU strategic partnership through cross-sectoral partnership composed of five Industrial clusters, three of them in the textile sector, one in advanced manufacturing, and one in the construction sector. Project activities mainly covered two cascade funding calls (announced in April 2023 and July 2024) for SMEs wherein 1.05 Million Euros of funding was distributed to selected innovative projects of 4 month implementation duration under Innovate, Green and Digital, and Global categories. These projects were monitored and supported by Project partners to help SMEs navigate the complete end to end process for successful project execution. Out of 40 applications received in first call, 21 Projects were awarded and out of 73 applications received in second call, 20 Projects were awarded. Other activities during the Project included conduct of 10 webinars which were attended by more than 150+ participants across EU; mainly represented by SMEs. Project Partners/Clusters also designed and implemented Pilot services based on the gaps identified in the industries in the region which resulted in 25+ SMEs getting customized services through the project. Also, for supporting SME internationalization towards third countries, particularly in the Middle East region, Cluster mission has been successfully completed resulting in new associations which could lead to sign off of an MoU soon.

Purpose of this Policy Paper

This Policy position paper aims to provide insights and recommendations drawn from the xBUILD-EU project execution, **highlight the needs of SMEs and encourage for enhanced cluster monitored financial support models in fostering resource-efficient and circular processes, building partnerships, and leveraging advanced technologies**.

There is also sharing of key stages in project execution, engagement of SMEs through funding support, webinars, Cluster pilot projects and international expeditions including learnings and policy implications.

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THE ROLE OF CLUSTER COLLABORTION IN SUPPORTING SMES

Small and medium-sized enterprises **(SMEs) face an increasingly complex landscape, with challenges related to innovation, access to finance, market expansion, talent acquisition, and skill development**. During Project partner interactions through xBUILD-EU project, it has been observed that **SMEs struggle to come out of their routine busy-ness activities to try/adopt new technologies, expand into international markets, and access tailored funding mechanisms**. In this context, **cluster collaboration has emerged as a key enabler, creating a structured environment where SMEs can share knowledge, leverage resources, and jointly tackle industry-wide challenges**.

By **connecting SMEs with research institutions, universities, large enterprises, and public stakeholders, industrial clusters** foster an innovation-driven ecosystem that enhances competitiveness, resilience, and sustainable growth. **The xBUILD-EU project findings highlight that cross-sector and cross-border cluster collaborations not only facilitate knowledge exchange but also provide SMEs with opportunities to engage in joint R&D, pilot projects, and commercial partnerships that would otherwise be difficult to access independently**.

Cluster collaboration and benefits

Cluster collaboration refers to the structured cooperation among businesses, academic institutions, and other stakeholders within a specific industry or value chain focusing on enablement within wider scope of a region. These clusters function as innovation hubs where SMEs gain access to shared resources, infrastructure, expertise, and financial opportunities.

During the project, it was identified that many SMEs are embedded within clusters at a regional level but remain disconnected from the broader European ecosystem. By **fostering stronger linkages between clusters**, SMEs can move beyond their local markets and **engage in cross-border value chains**, leading to greater knowledge spillovers, market diversification, and improved innovation capacity.

Through quadruple helix collaboration (industry, academia, government, and society), clusters drive interdisciplinary partnerships, encourage sustainable industrial practices, and accelerate digital transformation across sectors. In the case of xBUILD-EU, the collaboration between textiles, construction, and advanced manufacturing **has demonstrated how cross-sectoral synergies can lead to the development of new materials, smart manufacturing solutions, and digital tools** that enhance productivity and sustainability.

Impact on SMEs

For SMEs, this project has also demonstrated how **cluster collaboration serves as a catalyst** for SME innovation, international expansion, and sustainable industrial transformation. By fostering cross-sectoral and cross-border partnerships, **the project has enabled SMEs in the textile, construction, and advanced manufacturing sectors to develop cutting-edge solutions, access new markets, and integrate advanced technologies into their operations**.

One of the significant outcomes of the project has been the successful development of cross-sector innovations. **Through collaboration with advanced technology clusters, SMEs were able to integrate digital tools, AI** (Artificial Intelligence), **and sustainability-driven solutions into traditional manufacturing and construction processes**. For example, **a Spanish textile SME implemented AI-powered defect detection technology, improving product quality and optimizing inventory management, while an Italian firm developed smart sensor systems for building health monitoring, enhancing predictive maintenance and resource efficiency**.

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Beyond innovation, **internationalization was also a key success factor facilitated by cluster networks**. SMEs leveraged these connections **to expand their presence into new markets, including the UAE, Saudi Arabia, and Israel, establishing partnerships with local distributors and manufacturers**. A textile SME successfully introduced recycled technical fabrics to international buyers, positioning itself as a key player in sustainable textile solutions. Similarly, a construction SME developed eco-friendly mortar for heritage buildings, incorporating recycled textile fibers, a breakthrough in sustainable architecture that was made possible through collaboration with both construction and textile clusters.

Sustainability was at the core in the project, with SMEs embracing circular economy principles and integrating recycled materials into their production processes. **A medical devices manufacturer in Ireland developed a real-time carbon emission monitoring system, enabling businesses to track and reduce their carbon footprint efficiently. Additionally, an SME in Spain launched a digital system for smart textile flooring, which collects and processes data using AI to improve energy efficiency in buildings**.

Policy implications

The xBUILD-EU project has demonstrated the value of inter-cluster cooperation in accelerating SME innovation and internationalization. To maximize this impact, policymakers could consider:

Improving SME Accessibility to EU sectoral networks through Clusters
Connecting Industrial networks through Clusters would help structure the process of business challenge identification and resolution by engaging with cross sectors and cross border contributions. Also, as many SMEs remain unaware of available cluster opportunities, simplified application processes and targeted awareness campaigns could increase participation.

Strengthening Financial Support for Cluster Networks
Expanding funding for cross-border cluster initiatives and collaborative R&D can enhance SME access to international markets and foster commercialization of innovations.

Encouraging Public-Private Partnerships
Co-investment models, where public funding supports private-sector-led cluster projects, could drive long-term sustainability and innovation capacity.

Facilitating Knowledge Transfer & Skills Development
xBUILD-EU highlighted the success of on-the-job training over traditional classroom methods. EU-wide upskilling programs could integrate digital, green, and circular economy skills into SME workforce development.

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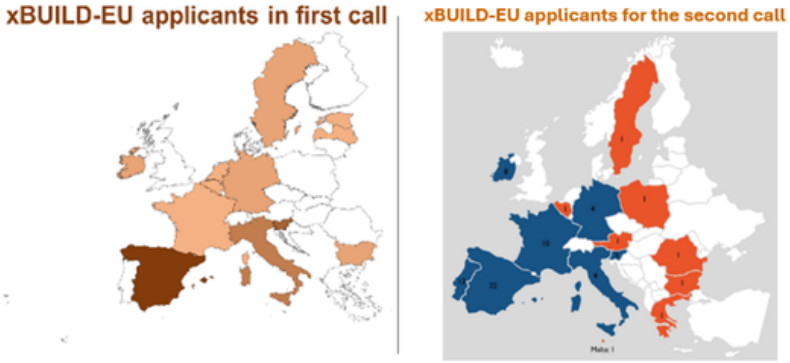
CASCADE FUNDING AS A TOOL FOR EMPOWERING SMES

Cascade funding, also known as Financial Support to Third Parties (FSTP), has emerged as a transformative tool to empower SMEs and address innovation implementation funding barriers. By providing simple, accessible, and targeted financial support (in this case innovation across sectors and borders), cascade funding effectively supported innovation, collaboration, and market adoption, ensuring that SMEs could actively contribute to Europe's green and digital transitions. Based on specific needs of participating SMEs, they could access funding to support implementation of innovative business idea (Innovate voucher), two companies can collaborate towards implementing circular business idea using digitalisation (Green and Digital voucher) or could access international markets for business expansion (Global voucher). The number of SMEs which were funded and the regions of participation are as follows:

Funding Call	**Total Fund**	Innovate*	Green & Digital*	Global*
First Call	510.000€	8	4 (8 SMEs)	6
Second Call	540.000€	7	5 (10 SMEs)	6

*Number of projects awarded



*Concentration of colour in the graphs above represents number of applications

It is also pertinent to mention that just by the end of first funding call, close to 15 new to firm innovative products / services were launched in the market. Also, close to 6 business contracts were signed between partnership SME members and business out of which 2 were with relevant stakeholders from third countries; highlighting the scope of increased exports, investment opportunities and employment generation thereof.

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CASCADE FUNDING AS A TOOL FOR EMPOWERING SMES

Benefits of cascade funding

By distributing funding through clusters and innovation networks, xBUILD-EU not only streamlined access to financial resources for SMEs but also enhanced the role of clusters as key facilitators of industrial transformation. The success of these calls has significantly increased the attractiveness of clusters, **encouraging more SMEs to join and benefit from their networks, expertise, and support structures**. This win-win dynamic strengthens clusters by bringing in high-potential businesses, while SMEs gain access to critical funding, mentorship, and internationalization opportunities. Success stories of some selected projects from first funding call are good examples.

Success stories

The xBUILD-EU project has fostered the development of highly innovative solutions across textiles, construction, and advanced manufacturing. Several projects introduced cutting-edge technologies to enhance industry practices. For instance, **a distributed sensor system for real-time building monitoring** was developed to improve predictive maintenance in wooden structures, while a **textile-based moisture detection sensor** provided early warnings for potential water damage. Another **project introduced advanced sensory technology into textile production to enhance real-time monitoring and reduce material waste**. Innovations also extended to the construction industry, where **a new system for concrete curing was developed**, providing precise control over structural strength and improving overall quality assurance in building projects.

In line with Europe's green and digital transitions, several projects focused on integrating sustainability and digital solutions into industrial processes. **A digital Carbon Emissions Monitoring System enabled manufacturers to track, report, and reduce their carbon footprint**, leading to tangible reductions in emissions through optimized machine operations. Other projects focused on sustainable materials, such as the **use of recycled textile fibers in construction mortar, creating eco-friendly solutions for heritage building restoration**. Additionally, **AI-driven textile inspection was implemented to minimize defects** and enhance production efficiency, reducing waste and improving overall supply chain management. The **adoption of additive manufacturing in smart flooring further demonstrated how digitalization** can improve both sustainability and operational efficiency in modern construction.

Internationalization was another focus area with several SMEs successfully expanding into new markets. Many projects targeted the UAE, Saudi Arabia, and Israel, forming strategic partnerships and exploring market potential for specialized textiles and advanced building solutions. A **project focusing on coated technical textiles for extreme environments established key partnerships in Saudi Arabia**, while **another project successfully positioned recycled technical fabrics for the Israeli market**. Additionally, **market expansion efforts in Dubai led to new collaborations in cooling and shielding textiles**, paving the way for innovative applications in both construction and personal protective wear.

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CASCADE FUNDING AS A TOOL FOR EMPOWERING SMES

Policy implications

Considering the success of xBUILD-EU cascade funding, Policymakers could consider expanding **Cluster rooted funding allocations to enable more SMEs, particularly in green and digital sectors**, to benefit from this model. **Aligning cascade funding more closely with regional development strategies may enhance its impact**, ensuring targeted support for businesses with high innovation potential and global market ambitions. Additionally, **streamlining application processes and incorporating follow-up support**, such as coaching, training, and market integration programs, could further strengthen the long-term benefits for SMEs.

These recommendations align with key European Commission policies, including the EU Green Deal, which emphasizes the need for climate-neutral and resource-efficient industries, and the Digital Europe Programme, which supports SME digitalization and technology adoption. The New Industrial Strategy for Europe also highlights the importance of cross-sector collaboration and resilience-building, making cascade funding a vital tool for supporting SMEs in this transition.

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OUTCOMES AND IMPACTS OF THE PROJECT

The xBUILD-EU project has provided critical insights into the challenges faced by SMEs across the textile, construction, and advanced manufacturing sectors, identifying key gaps and implementing targeted solutions to foster business resilience. A comprehensive survey conducted across Portugal, Spain, Slovenia, and Ireland revealed that SMEs are still grappling with the long-term effects of the COVID-19 pandemic, compounded by new global disruptions such as rising raw material and energy costs, geopolitical instability, and evolving market conditions.

Skill gap mapping at partner regions

As part of this xBUILD-EU Project, all Project partners were engaged in gap analysis studies to identify their regional business resilience needs and opportunities. Series of co-creation workshops and webinars too were organized towards this. Skill gaps identified across Project Partner regions are as listed:

Tèxtils.CAT – Catalonia, Spain: The textile industry in Catalonia faces significant challenges due to high energy costs, the digital transition, and staff training expenses, compounded by a lack of data on energy consumption. A major issue is the shortage of skilled workers, particularly in technical textiles, as training programs tend to focus more on the fashion sector. Rapid technological advancements require constant upskilling, but without a strong emphasis on internal training, companies risk inefficiencies and outdated skills, hindering digitalization and sustainability efforts. Additionally, unattractive salaries and demanding working conditions in older machinery environments further contribute to the struggle in retaining and attracting qualified staff.

ATEVAL – Valencia, Spain: The textile sector in Valencia, Spain, struggles with a shortage of skilled professionals in advanced manufacturing, sustainability, specialty textiles, design, and digital marketing. Many workers lack expertise in operating modern textile machinery, integrating Industry 4.0 technologies like IoT and AI, and complying with environmental regulations, which affects productivity and innovation. Training programs often rely on outdated curricula, and limited collaboration between academia and industry, along with resource constraints for SMEs, makes it challenging to upskill workers and meet evolving market demands. Addressing these issues requires initiatives such as reinstating the dual training program in Textile Engineering at the Polytechnic University of Valencia, government support for workforce development, and stronger partnerships between textile companies and educational institutions to ensure a competitive and future-ready industry.

CITEVE – Norte, Portugal: Although the Portuguese textile and clothing (T&C) sector is a key player in European textile production, companies struggle to find skilled workers, essentially due to:
·the aging population, resulting on a deficiency on young workers entering the industry to substitute the workers retiring
·the perception and image associated with the T&C industry, mainly the image of an industry that is physically demanding, low paying and lacking in career prospects
·the lack of appropriate training and educational programs to develop skilled workers for the T&C industry, particularly related with green and digital transition training needs.
The Portuguese T&C industry need to attract talented workers, have tailor-made training adapted to the new needs of the industry, especially to face the green and digital transition and improve the worker's wage.

TUS/IDEAM – Limerick, Ireland: The textile and construction industries in Ireland face critical skill shortages, particularly in digital, green, and STEM-related fields, requiring urgent upskilling efforts. The textile sector struggles with gaps in advanced manufacturing, sustainable production, innovation, design, supply chain management, and commercial skills, while the construction industry needs an additional 120,000 skilled workers and extensive re-skilling to meet climate and housing goals. Lifelong learning participation remains low, highlighting the necessity of continuous education, particularly in digital transformation, automation, and green construction practices. Collaboration between industry and education is crucial to address these gaps, improve workforce adaptability, and foster innovation for long-term competitiveness.

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CCS – Slovenia: The construction sector in Slovenia is facing acute challenges due to a severe shortage of skilled workers in specialized areas such as BIM (Building Information Modeling) technology, energy-efficient building techniques, and modern project management practices. With a booming demand for green and smart buildings, the industry struggles to find professionals capable of integrating cutting-edge digital tools and sustainable construction methods. Additionally, the rapid pace of technological advancements in construction equipment and materials has left many workers unprepared to handle the latest innovations. This skills deficit is further compounded by an aging workforce and a lack of vocational training programs aligned with the sector's evolving needs.

Qualitative outcomes of the project

Webinars: The project successfully organized 10 online webinars focused on advanced technologies for digitalization and the green & circular economy, **attracting 292 participants** from across the EU region. These webinars featured expert speakers who shared valuable insights on the latest trends and innovations, fostering knowledge exchange among industry professionals.

Pilot Projects delivery: Each Project Partner Cluster developed and launched a new digitalization service tailored to the needs of their members, **engaging nearly 30 SMEs** in adopting cutting-edge solutions.

Wider ecosystem effects: The project also hosted a four day **internationalization mission** by Project Partners **to Saudi Arabia**, where encouraging response was received towards enhancing business collaboration opportunities. This mission facilitated fruitful meetings with universities, businesses, and industrial consortiums across the construction, textile, and advanced manufacturing sectors, opening new opportunities for business growth.

The Project activities also fostered effective engagements with multiple SMEs in the region leading project ideation, match making with University laboratory facilities or Industrial smart factory supports towards project trial collaborations and coaching during the project implementation resulted in not only attracting new members to the Clusters but also strengthened collaborations with existing members. Most importantly, the SMEs which applied for the funding, which engaged in webinars and participated in pilot projects have now become even more accessible for Clusters to extend their supports and widen the network.

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POLICY RECOMMENDATIONS

The xBUILD-EU project has demonstrated the effectiveness of cluster collaboration and cascade funding in addressing SMEs' most pressing challenges. By precisely targeting SME needs identified in gap analyses and leveraging the expertise of well-established clusters, the project successfully fostered business growth, innovation, and internationalization. However, there remains significant potential for further enhancing the impact of these mechanisms through strategic policy actions. These recommendations are towards addressing the key value chain constraints identified during the Project and needs across EU region to further align the business ecosystem in connect-collaborate-prosper network and grow internationally.

Enhancing Cascade Funding

The cascade funding mechanism implemented in xBUILD-EU has proven highly effective, with measurable impacts such as business agreements in internationalization actions and new product launches. The success of this model builds upon prior experiences in projects like GALACTICA, where well-established international networks significantly accelerated implementation. However, improvements can further increase its effectiveness:

·Expanding **cascade funding programs to include more SMEs**, particularly those in emerging sectors such as green technologies and digitalization.

·Ensuring better alignment between cascade funding and regional development policies, allowing for a more strategic allocation of funds.

·**Improving accessibility and awareness of cascade funding**, particularly in less developed regions where SMEs may lack knowledge or capacity to apply.

·Many SMEs struggle to navigate the complex funding landscape, resulting in missed opportunities. To improve efficiency and accessibility, National and regional development programs should be more closely integrated with EU cascade funding schemes, ensuring that SMEs can seamlessly transition between funding sources based on their growth stage and needs.

·**Ensuring Long-term Sustainability**: While cascade funding and cluster collaboration provide short-term financial and strategic support, policies must ensure that SMEs continue to thrive beyond the funding phase. To achieve this, **Long-term networks should be established that enable SMEs to continue collaborating, innovating, and scaling even after funding ends**. This could involve the creation of permanent SME innovation hubs or digital platforms where businesses can share expertise and form new partnerships.

·**Incentivizing continued SME collaboration with Clusters beyond the project lifecycle through follow-up support mechanisms**, such as coaching programs, structured networking events, and ongoing access to advisory services.

Fostering Cluster Collaboration

Clusters serve as vital enablers of SME resilience, providing access to resources, knowledge, and strategic partnerships. To strengthen the role of clusters in accelerating innovation and internationalization, policy measures could focus on:

·Supporting cluster management bodies with dedicated funding and capacity-building programs to facilitate SME participation and ensure efficient coordination of joint projects.

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POLICY RECOMMENDATIONS

·Organizing matchmaking events and networking platforms to encourage cross-sectoral and cross-border collaborations. These events should integrate SMEs from various industrial ecosystems, ensuring broader market access and technology transfer.

·**Strengthening Interconnected Clusters for Rapid Problem-Solving**: Cross-sectoral collaboration, as seen in GALACTICA, shows that interconnected clusters can rapidly share best practices and help SMEs adapt to industrial shifts. Establishing a pan-European cluster network focused on skill-sharing would enable SMEs to tap into expertise beyond their immediate regions. This approach fosters faster adaptation to market needs and accelerates innovation across sectors

·**Presenting Regional Business Challenges in EU Conferences**: Clusters could be enabled to play a key role in advocating for SME skill needs by presenting regional business challenges at EU conferences and policy forums. Platforms like the European Cluster Collaboration Platform (ECCP) allow cluster managers to influence policy, funding priorities, and workforce development programs. Engaging policymakers ensures that SME skill gaps are strategically addressed at the EU level.

Cluster collaboration could be seen as creating a network (Clusters' interconnection) of networks (SMEs in the region) which could be structured hierarchically in smoother and quicker collaboration imbibing startup kind of work process towards quick results and sustainable growth.

Clusters solutions to fill the skill gaps

As industries across the EU undergo rapid transformations driven by digitalization, sustainability goals, and economic shifts, it is crucial to continuously track both macro and microeconomic impacts on SMEs. Evolving skill gaps ranging from digital competencies to sustainable manufacturing technique threaten the competitiveness of businesses, particularly in sectors like construction, textiles, and advanced manufacturing. Clusters, as key enablers of regional economic development, can play a pivotal role in bridging these gaps by fostering **stronger collaboration with industrial bodies, research institutions, and associations**. By leveraging real-time industry insights, clusters can **co-design targeted training programs** that align with emerging needs while also **facilitating practical solutions to business challenges through peer learning, networking, and collaborative projects**. Strengthening inter-cluster cooperation ensures that SMEs not only keep pace with evolving industry demands but also actively contribute to shaping Europe's innovation-driven future. This could be implemented as:

·**Organizing Hackathon-Style Events for SMEs to Solve Industry Challenges**: Hackathons, inspired by initiatives like DIGITRANS, can provide SMEs with a platform to co-create solutions, exchange expertise, and develop new skills in real-time. These events would enable SMEs to tackle industry challenges collaboratively while strengthening their networks across clusters and sectors. By promoting peer-to-peer learning, hackathons can accelerate practical skill development and innovation. These events lead to quick and effective identification of skill gaps in key sectors within the region.

·**Leveraging EU Project Learnings for Regional Skill Development**: Previous EU projects like EXXTRA and SMARTENERGY have demonstrated how clusters can bridge skill gaps by providing SMEs with targeted training in digitalization, sustainability, and advanced manufacturing.

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