



# BioManufacturing Eurocluster for Recovery and Resilience in EU

## D2.3 Catalogue of best practices and lessons learned

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## Disclaimer

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## Executive Summary

As part of WP2 - Eurocluster & Ecosystem building / Task 2.2 - Training the cluster managers Peer-to Peer Learning and Clusters` Capacity Building, an Analysis of cluster managers strategic skills was performed through a dedicated survey, released this summer 2023.

The aim of this survey was to carry out a self-assessment of the strategic skills of key cluster players (Project Manager, Cluster Manager, Relationship Officer, CEO, Deputy CEO, Senior executive, Innovation Director) with an interest in biomanufacturing and/or MedTech. With this in mind, it was structured as follows:

1. Name of the Cluster
2. What is your position in the cluster?
3. Number of members in your cluster:
4. What is the geographical coverage of your cluster (local, regional, national, or international)?
5. Can you briefly describe your cluster's focus within the biomanufacturing or MedTech sectors?
6. Can you provide examples of key performance indicators or metrics used to assess the impact of your actions in relation to the MedTech or biomanufacturing sector?
7. What do you think should be the key management skills that should further be developed?
8. What are your main challenges in terms of strengthening Europe's resilience?
9. What are your main challenges in terms of green transformation?
10. What are your main challenges in terms of digitalisation?
11. What are the main strategic priorities you wish to achieve in 2023 and beyond? (please select the top 3 priorities)
12. Is there anything else you would like us to know about your cluster's strategic capacity or strategic management needs?

These data were presented to consortium members in September and was used to establish good practices in order to provide recommendations on the strategic skills of cluster managers.

### 1. Introduction

Within the diverse and expansive European industrial landscape, key clusters emerge, each contributing uniquely to the continent's economic vibrancy. Comprising participants ranging from prominent life sciences, digitalization, green transformation sectors to specialized healthcare and technological entities, these clusters play a pivotal role in shaping the region's competitive edge. As they adapt and pivot in response to both global challenges and rapid technological progress, gaining an in-depth understanding of their strengths, pain points, and future aspirations is of paramount importance. This analysis meticulously examines these facets, offering invaluable insights to propel these clusters towards a more sustainable, innovative, and resilient future amidst an ever-evolving global economic scenario.

## 2. Overview of Participating Clusters

7 clusters responded to this survey: LifetecZONE, BioRegio STERN, MedSilesia, Medicen, HealthTurku and Biocat:

### LifetecZONE

Lifeteczone is a network of Lifesciences and Medical Technology SMEs in the South of the Netherlands. As an association, Lifeteczone aims to achieve business growth and speed up innovation processes of SMEs. Lifeteczone is a portal/helpdesk which helps SMEs find their way in all public and private services available in the region.

### BioRegio STERN

Since 2001, BioRegio STERN Management GmbH has been active as an economic developer for life sciences. It promotes innovations and start-ups on behalf of the public sector, thus helping to strengthen the region and the industry as a whole. It is a central point of contact for founders and entrepreneurs, including those from cooperating high-tech sectors such as automation and IT.

### MedSilesia

MedSilesia is the cluster that provides an effective platform for cooperation and dialogue between enterprises, R&D units and effective use and combination of their potentials, in order to implement innovative solutions and technologies, transfer and absorption of knowledge, experience between cooperating entities, as well as undertaking joint activities and implementation of joint projects affecting the global value chain.

### Medicen Paris Region

Medicen is the competitiveness cluster of the Paris Region and one of Europe's largest cluster in Life Sciences and Healthcare. Founded in 2005, it connects together all the key stakeholders (leading research institutes, innovative SMEs, hospitals, incubators, large companies and territorial authorities) to define the best innovation policy to develop growth and employment; strengthen international competitiveness for the French health ecosystem and increase its attractiveness.

### HealthTurku

TSCP (Turku Science Park Ltd) acts as the coordinator of HealthTurku cluster comprising of more than 90 enterprises and the Health Campus Turku network with two universities, a university hospital and two universities of applied sciences. TSCP offers business development services that cover the entire lifecycle of entrepreneurial activities, ranging from testing a business idea and establishing a company to internationalisation and expanding of international business operations. TSCP also runs activities of the first Life Science Accelerator in Finland.

### Biocat

Biocat is a strategic stakeholder and catalyst for building, promoting and projecting the Catalan life sciences and healthcare ecosystem, known as the BioRegion of Catalonia. Biocat was established in 2006 as a public-private foundation at the behest of the Government of Catalonia and the Barcelona City Council to identify the needs of the BioRegion and implement a strategy and action plan to maximize the economic and social impact of the life sciences and healthcare innovation ecosystem in Catalonia.

### 3. Key Performance Indicators and Impact Metrics

When evaluating the success and impact of cluster management, it's pivotal to consider a series of Key Performance Indicators (KPIs). Among these, stakeholder engagement and satisfaction metrics stand paramount, offering insights into member involvement and contentment. The number and depth of cross-sectoral collaborations reveal the breadth of networking, while the annual net revenue from exports by cluster members sheds light on economic growth. New partnerships and the ratio of projects funded to those certified act as growth barometers. Attendance at flagship events measures outreach and networking efficacy. Furthermore, digital outreach, marked by website interactions and social media engagements, is essential. Investment metrics, both direct and indirect, gauge support for R&D and business expansion. Lastly, interactions with policymakers highlight the cluster's influence and advocacy in the broader tech transfer landscape.

More specifically, here are the KPIs highlighted by the clusters that responded to the survey:

#### **LifetecZONE**

- Engagement KPIs: Measurement of satisfaction and participation annually via questionnaires, Engagement in cluster activities.
- Collaboration Metrics: Qualitative data collection on new collaborations, Publications produced for inspiration derived from new collaborations.

#### **BioRegio STERN**

- Direct Support for Companies: Number of national/international projects funded for biotech and MedTech sectors, Count of companies that received support for funding programs, Increase in TRL (Technology Readiness Level) of products/services developed under funding programs.
- Event and Participation Metrics: Database "members" count, Amount of public funding acquired and distributed to "members", New companies supported through start-up consulting, Number of contacts established through events or site visits to determine support needs, Count of events/workshops hosted or co-organized, Participant numbers at events related to biotech/MedTech topics.
- Visibility of Cluster Network: Click counts for websites / job portals / newsletters, social media followers count, Event sponsorships and other related metrics.

#### **MedSilesia**

- Business Development KPIs: Joint project count, Annual net revenue from export sales of cluster's members, Export activities, Competency development initiatives, Count of commercial contacts established.

#### **Medicen**

- Growth and Viability Metrics: Count of viable companies within the cluster, Number and amount of fundraisings, Project maturity dynamics (including CE marking), New partnership count, new companies setting up in the Paris Region (e.g., CDMOs for biomanufacturing), number of project funded / compared to number of project certified.
- Event and Participation Metrics: Number of participants at main events, number of companies and their geographical origins attending events, Members interested in specific topics within the cluster.

#### **HealthTurku**

- Investment Metrics: Investments directly or indirectly supporting R&D, manufacturing, and business development.

#### **Biocat**

- Engagement and Promotion Metrics: Number of scouting expeditions conducted, Count of investment-centric events organized, Acceleration programs launched, Tally of challenges and competitions orchestrated, Educational programs alongside the total duration of training imparted, number of promotional events/programs Diversity within target groups for entrepreneurship/transfer promotional initiatives, covering students, early and late-career researchers, and academic leaders, FTE dedicated to entrepreneurship promotion, Meetings count with policymakers or stakeholders focused on tech transfer, Number of engagements between stakeholders.

#### 4. Management Skills Development

In the realm of Management Skills Development, clusters must prioritize adaptive business models, ensuring they remain agile and responsive to current industry trends. A relentless commitment to sustainability is non-negotiable, with green initiatives paving the way for future resilience. Embracing digital transformation is not just an option but a necessity, enhancing member services and operational efficiency. Active member engagement, a cornerstone of a vibrant cluster, should be fuelled by strategic and persistent initiatives. Furthermore, a structured approach to innovation, together with a diverse service portfolio, ensures clusters cater effectively to the evolving needs of their members. In essence, these management skills, anchored in feedback and continuous refinement, are vital for a cluster's sustained growth and relevance.

Regarding the development of management skills, the following have been identified:

#### **LifetecZONE**

- Green and Digital Transitions: Actively support members in adapting to sustainable practices and digital innovations for better resilience.
- Member Engagement: Formulate strategies to boost member participation and engagement within the cluster.
- Capital Access: Facilitate access to risk capital, including options like business angels, VC funds, etc.

#### **BioRegio STERN**

- Business Model Evolution: Focus on the development and improvement of new business models tailored to the biotech and MedTech sectors.
- Green and Digital Transitions: Prioritize member support for sustainable practices and digitalization, reinforcing resilience in the process.
- Member Engagement: Enhance strategies to increase member participation and cohesion.
- Innovation Management: Boost overall cluster performance through structured innovation management techniques.
- Future-oriented Exploration: Identify and support new topics and sectors for the future growth of the cluster.

### MedSilesia

- Innovation Management: Strengthen the cluster's capacity through a structured approach to innovation management.
- Service Portfolio: Focus on the expansion and diversification of the services offered to members, meeting their evolving needs.

### Medicen

- Service Portfolio: Enhance and diversify the services provided to cluster members, ensuring they remain competitive and relevant.
- Green and Digital Transitions: Emphasize support for members in the transition to eco-friendly practices and digital advancements, fostering resilience.
- Member Engagement: Implement measures to bolster member engagement and participation within the cluster's initiatives.

### HealthTurku

- Business Model Refinement: Dedicate efforts to improve and innovate business models, ensuring they cater to current industry demands.
- Green and Digital Transitions: Provide robust support to members in integrating sustainable practices and digital innovations, enhancing overall resilience.

### Biocat

- Increasing Members' Engagement: Constantly iterate and optimize strategies to spark heightened member involvement and commitment within the cluster.
- Structured Innovation Management: Elevate cluster performance by incorporating a well-defined innovation management paradigm, tailored to drive growth and adaptability.

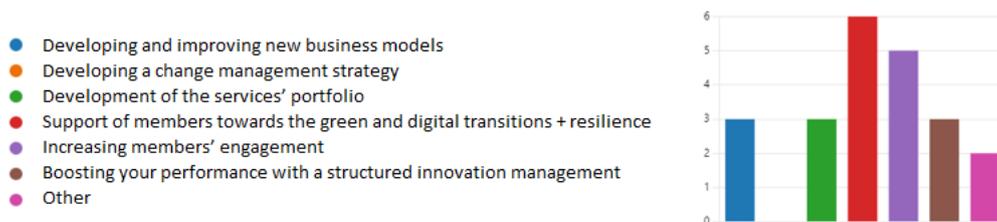


Figure 1: Key management skills identified by the clusters

## 5. Challenges in Strengthening Europe's Resilience

Strengthening Europe's resilience poses several key challenges that require astute attention. Meticulous value chain analyses are paramount, extracting strategic levers that bolster operational efficiency. It's essential to prioritize the identification and procurement of pivotal supplies and technologies, ensuring the backbone of sustained industry growth remains intact. Embracing innovative business processes offers clusters a competitive edge in an ever-evolving landscape. Supply chain transparency becomes crucial, not only for trust but for risk mitigation and precise decision-making. Furthermore, addressing funding challenges, especially for early-stage, transformative

innovations, remains a vital task. In essence, Europe's resilience hinges on a blend of foresight, innovation, and proactive problem-solving.

For the resilience section, here is a description of the answers collected:

#### **LifetecZONe**

- Critical Supplies & Technologies: Prioritize the identification of key supplies and technologies crucial for sustaining the industry's growth.
- Value Chain Analysis: Deep dive into analyzing the strategic levers present within the value chains to enhance operational efficiency.

#### **BioRegio STERN**

- Value Chain Analysis: Focus on deciphering the strategic levers in value chains to uncover areas of improvement.
- Business Process Innovations: Support members in implementing innovative business processes, driving efficiency and competitive advantage.
- Supply Chain Transparency: Advocate for a more transparent supply chain, aiding in risk mitigation and better decision-making.
- Critical Supplies & Technologies: Emphasize identifying and securing pivotal supplies and technologies that drive the industry.
- Member Pain Points: Recognize and address the primary challenges faced by cluster members, offering tailored solutions to navigate these issues.

#### **MedSilesia**

- Business Process Innovations: Encourage and assist in the implementation of novel business processes, driving innovation within the cluster.
- Support the incorporation of innovative business processes to enhance operational excellence within the cluster.
- Supply Chain Transparency: Promote increased transparency within supply chains, ensuring clarity and confidence for all stakeholders.

#### **Medicen**

- Funding Challenges: Address the constraints presented by dilutive funding schemes, exploring alternative avenues for financial support.
- Business Process Innovations: Reinforce the value of introducing and implementing innovative business processes within the cluster.
- Critical Supplies & Technologies: Take proactive measures to identify and ensure access to vital supplies and technologies imperative to industry growth.
- Value Chain Analysis: Dedicate resources to analyse the strategic levers within value chains, boosting efficiency and member value.

#### **HealthTurku**

- Funding Gaps for Innovations: Address the absence of risk/grant money for early-phase demonstrations of groundbreaking innovations, seeking ways to fill this crucial funding gap.

#### **Biocat**

- Analysing Strategic Levers in Value Chains: Engage in systematic and granular value chain analyses, seeking out and harnessing strategic levers for cluster fortification.
- Identifying Critical Supplies & Technologies: Adopt a proactive stance in spotlighting and accessing the most critical supplies and technologies, bolstering the cluster's foundational strengths.



Figure 2: Main resilience challenges identified by the clusters

## 6. Challenges in Green Transformation

Green transformation remains paramount in ensuring the sustainability of industries. Among the predominant challenges are a widespread knowledge gap in achieving ESG (Environmental, Social, and Governmental) targets, signalling a pressing need for educational initiatives. Simultaneously, industries grapple with a lack of consistent standards on sustainability, pushing for the necessity of uniform guidelines. Another notable obstacle is the complexity of navigating governmental sustainability policies, requiring clearer guidelines for industries. Despite the evident long-term benefits, there exists a challenge in advocating for the immediate importance of sustainability. Lastly, the pursuit of sustainable finance instruments to back green initiatives remains crucial, offering both a challenge and an opportunity for growth and innovation.

For green transformation, respondents indicated:

### LifetecZONE

- Sustainability Awareness: Advocate for increased recognition of the importance of sustainability and its long-term impact on the industry.
- Knowledge Gap in ESG Targets: Address the apparent lack of know-how in contributing effectively to environmental, social, and governmental goals.
- Strategic Benefits: Provide empirical data and insights on the strategic benefits of devising more environmentally friendly medical devices.

### BioRegio STERN

- Sustainable Financing: Explore and promote sustainable finance instruments to support green initiatives within the cluster.
- Knowledge Gap in ESG Targets: Tackle the lack of expertise in effectively contributing to environmental, social, and governmental objectives.
- Governmental Policies: Improve understanding and navigation of government sustainability policies to ensure compliance and leverage benefits.
- Industry Standards: Address the absence of uniform industry standards on sustainability, advocating for standardized guidelines.

### MedSilesia

- Knowledge Gap in ESG Targets: Intervene in the prevalent lack of know-how in contributing meaningfully to environmental, social, and governmental goals.
- Sustainable Financing: Champion the discovery and adoption of sustainable finance instruments to bolster green initiatives. Prioritize the identification and implementation of sustainable finance instruments to further green transformation efforts.

### Medicen

- Sustainable Financing: Advocate for the adoption of sustainable finance instruments as a vital tool for green transition.
- Knowledge Gap in ESG Targets: Address the lack of proficiency in contributing to environmental, social, and governmental targets.
- Constraints in Green Consideration: Highlight challenges and constraints of adding green considerations from inception, especially when not mandated.
- Industry Standards: Emphasize the need for consistent industry standards on sustainability, seeking standardization across the sector.

### HealthTurku

- Sustainable Financing: Propose the introduction and promotion of sustainable finance instruments to support green transformation initiatives.

### Biocat

- Raising Awareness: Underscore the significance of understanding sustainability's profound repercussions on the industry.
- Distant Objectives: Highlight the challenge posed by some goals that may seem remote, emphasizing the need for immediate action regardless of the timeline.
- Sustainable Finance Instruments: Accentuate the essential task of discovering and integrating sustainable financial mechanisms to further green initiatives.
- Knowledge Gap in ESG Targets: Endeavor to address and bridge the prevalent knowledge deficiency when it comes to making contributions to environmental, social, and governmental targets.
- Governmental Sustainability Policy: Push for enhanced clarity and understanding of governmental policies on sustainability, ensuring better compliance and strategic alignment.
- Lack of Industry Standards: Call attention to the pressing need for established and shared industry benchmarks on sustainability, advocating for a standardized approach.



Figure 3: Main Green transformation challenges identified by the clusters

## 7. Challenges in Digitalisation

Integrating digital elements into traditional business models remains a complex task faced by many clusters. Moreover, trust issues arise due to the prevailing lack of transparency in data security. Clusters are also grappling with a significant shortage of technical IT expertise, which can impede successful digital transformations. As clusters evolve, there's an urgent need to optimize their digital infrastructure to better serve their objectives. However, budgetary constraints can often act as roadblocks to such digital aspirations, necessitating creative financial solutions. Notably, the absence of a comprehensive digital transformation strategy can lead to strategic misdirection. Another challenge is refining the often-inefficient digitalization processes currently in place. In specific regions like Germany, the health sector encounters unique challenges stemming from past digitalisation policies and current regulations. Furthermore, turning digital capital into genuine economic value remains an intricate task, and the widespread adoption of new IT tools continues to be a challenge across clusters.

As for digitalisation, the clusters have responded:

### LifetecZONE

- Digital Integration in Business Models: Navigate the complexities of incorporating digitalization aspects into established business models.
- Data Security Concerns: Address the prevalent lack of transparency concerning data security and build trust around data handling processes.
- IT Expertise Shortage: Recognize the evident lack of technical IT expertise within the cluster, suggesting investments in training or external consultation.

### BioRegio STERN

- Digital Integration in Business Models: Deal with the challenges of infusing digital aspects into the current business models.
- Infrastructure Optimization: Focus on enhancing the digital infrastructure to support the needs of the cluster.
- Budgetary Constraints: Understand the budgetary limitations hampering digital transformation and seek solutions or alternatives.
- IT Expertise Shortage: Address the critical lack of technical IT know-how within the cluster.
- Digital Strategy Vacuum: Recognize the absence of a coherent digital transformation strategy and advocate for its development.
- Process Inefficiencies: Identify inefficiencies in current digitalization processes and drive their optimization.
- Regulatory & Political Hurdles (Germany): Highlight the particular challenges faced due to Germany's past digitalization strategies and the current regulatory framework, especially concerning health sector solutions.

### MedSilesia

- Digital Integration in Business Models: Address the integration complexities of digital facets within pre-existing business models.

- Budgetary Constraints: Recognize and work around budgetary limitations impeding the digital transformation journey. Acknowledge the financial constraints hindering digital transformation and seek viable solutions.
- Digital Integration in Business Models: Manage the challenges linked with introducing digital elements into established business models.

### Medicen

- Infrastructure Optimization: Prioritize the enhancement and optimization of the current digital infrastructure.
- Budgetary Constraints: Highlight the budgetary challenges affecting the digital transformation and strategize on how to navigate them.
- Digital Integration in Business Models: Recognize and tackle the intricacies of embedding digitalization aspects into current business models.
- Infrastructure Optimization: Drive efforts towards refining the digital infrastructure in line with the cluster's requirements.
- Digital Capital Utilization: Strategize on ways to effectively convert digital capital into tangible economic value.
- Process Inefficiencies: Identify and streamline inefficient digitalization processes to enhance operational efficiency.
- Driving adoption of new IT tools and processes: Focus on seamless integration and training for new digital tools.

### HealthTurku

- Digital Capital Utilization: Understand the challenges of turning digital capital into economic value and devise strategies to overcome them.
- Digital Integration in Business Models: Overcome the complexities associated with integrating digital features into traditional business models.

### Biocat

- Driving adoption of new IT tools and processes: Focus on seamless integration and training for new digital tools.
- Lack of technical IT expertise in the cluster: Address the deficiency by investing in training or hiring external experts.
- Optimising digital infrastructure: Aim for a robust and agile digital framework to support all operational needs.
- Inefficient digitalisation processes: Recognize, assess, and streamline processes to ensure optimal digital efficiency.

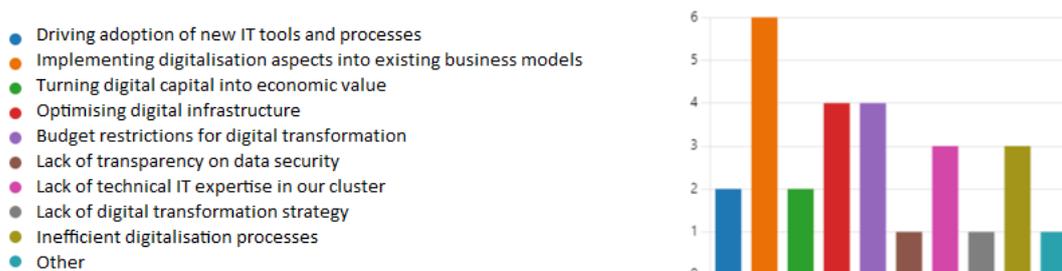


Figure 4: Main Digitalisation challenges identified by the clusters

## 8. Strategic Priorities for 2023 and Beyond

In charting the course for 2023 and beyond, strategic priorities emerge as guiding beacons. Foremost is the imperative to tap into new public funding avenues, ensuring robust financial support for clusters' endeavours. Alongside, service expansion stands out, demanding innovation to resonate with evolving market demands and member needs. Collaborative ventures underscore the pivotal role of partnerships, with an emphasis on mutual growth and innovation. The drive towards internationalization aims to broaden horizons, tapping into global markets and opportunities. Business sustainability and resilience, coupled with effective branding, emerge as non-negotiables, ensuring long-term growth. Additionally, communication's amplified role as a tool can't be overlooked, set to elevate visibility and industry presence. The collective vision paints a future of growth, collaboration, and innovation.

For the coming years, here are the strategic priorities identified by each cluster:

### LifetecZONE

- Funding Possibilities: Explore and capitalize on new public funding sources to support cluster activities and projects.
- Service Expansion: Identify areas for the development of new attractive services that cater to current market and member demands.
- Collaborative Ventures: Emphasize the potential for building partnerships or collaborations, which can bring mutual benefits and enhance the cluster's impact.

### BioRegio STERN

- Business Sustainability: Focus on developing a sustainable business model that ensures long-term growth and resilience.
- Funding Possibilities: Leverage new public funding avenues to finance cluster projects and initiatives.
- Service Expansion: Dedicate resources to the creation and launch of new attractive services tailored to member needs and industry trends.

### MedSilesia

- Global Outreach: Prioritize internationalization efforts to expand the cluster's influence and tap into global markets and opportunities.
- Service Expansion: Drive the development of new services that address current gaps and cater to evolving member demands.

- Collaborative Ventures: Foster partnerships or collaborations, viewing them as strategic pathways to accelerate growth and innovation.
- Communication Boost: Invest in initiatives that enhance communication and visibility, positioning the cluster prominently in the industry landscape.
- Collaborative Ventures: Recognize the immense potential of partnerships and collaborations and strategically nurture these relationships.
- Funding Possibilities: Explore new public funding channels to secure resources for cluster development and projects.

### Medicen

- Service Expansion: Prioritize the ideation and implementation of new attractive services that resonate with member needs and market demands.
- Funding Possibilities: Harness new public funding sources to ensure steady financial support for cluster activities.
- Business Sustainability: Work towards establishing a sustainable business model that balances profit with purpose and ensures longevity.
- Brand Recognition: Work on enhancing external recognition through strategic branding and positioning efforts.
- Communication Boost: Strengthen communication strategies to enhance visibility and influence within the industry.

### HealthTurku

- Funding Possibilities: Scout and utilize new public funding channels, ensuring steady financial inflow for cluster activities.
- Global Outreach: Channel efforts towards internationalization, opening doors to global opportunities and collaborations.
- Collaborative Ventures: Prioritize partnerships and collaborations, recognizing them as vital elements of strategic growth and innovation.

### Biocat

- Internationalisation: Venturing beyond borders, we're set on expanding our footprint globally, harnessing international opportunities.
- Development of New Attractive Services: Listening to our community, we aim to design and introduce services that strike a chord with the needs of the times.
- Partnership/Collaboration: Together, we grow stronger. Our strategy is interwoven with partnerships and collaborations, driving mutual success and innovation.

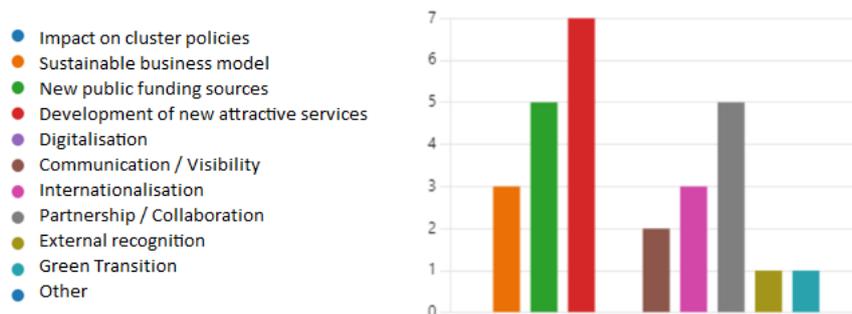


Figure 5: Main strategic priorities identified by the clusters

## 9. Additional Insights on Strategic Capacity and Management Needs

In addition to this study, some clusters have highlighted 2 additional elements to be taken into consideration:

- In the ever-evolving EU/Nordic landscape, the challenge of new company formation is becoming increasingly pronounced. This is largely attributable to the diminishing public funding sources coupled with a dearth of early phase risk capital, particularly from VC Funds focusing on nascent stages.
- However, a silver lining exists within the structure of management boards. Predominantly comprised of entrepreneurs, these boards present an innate advantage. Their composition fosters an environment conducive to designing and executing activities that resonate deeply with our target group. This collaboration ensures that strategies are not only aligned but also effectively address the core needs of the industry.

## 10. Conclusion: Key Insights from the Catalog

In conclusion, here are the 6 key messages identified during this analysis:

### Management Skills Development

It's paramount that managers and leaders within European clusters actively nurture crucial skills such as critical thinking, adaptability, and strategic vision. In the face of challenges, there's a heightened need for managers to be adept in conflict resolution, project management, and effective communication.

### Strengthening Europe's Resilience

To fortify Europe's industry resilience, it's essential to prioritize the identification of critical supplies and technologies and deepen the value chain analysis. Equally important is the emphasis on transparent supply chains, business process innovations, and understanding member challenges.

### Green Transformation

As Europe gears up for a greener future, clusters face challenges in elevating sustainability awareness, addressing knowledge gaps in ESG targets, and promoting sustainable financing. The need for standardized industry guidelines on sustainability also stands out as a major consideration.

### Digitalisation

Digital integration into business models remains a crucial challenge, accompanied by concerns around data security and IT expertise shortages. Additionally, optimizing digital infrastructure and addressing the existing inefficiencies in the digitalization process will be pivotal for future success.

### Strategic Priorities for 2023 and Beyond

Looking forward, European clusters need to focus on expanding services, seeking new funding possibilities, and promoting collaborative ventures. Strengthening communication, ensuring business sustainability, and expanding global outreach are also crucial strategic priorities.

### Additional Insights on Strategic Capacity and Management Needs

The formation of new companies in the EU/Nordics is challenged by limited public funding and a scarcity of early phase risk capital. However, having management boards rich in entrepreneurial expertise facilitates the design and roll-out of activities in sync with target group needs.

In synthesizing the catalog's insights, Europe's industrial clusters need to not only adapt to current challenges but also anticipate future hurdles. Through effective management training, resilience building, green initiatives, digitalization strategies, and clear priorities for the coming years, the clusters can navigate these challenges and drive industry-wide success. As we move forward, fostering collaboration and tapping into the entrepreneurial spirit of management will be instrumental in shaping a prosperous European industry landscape.

## 11. Next Steps

This D2.3 deliverable is only a first step towards improving internal cluster practices. The current aim is to strengthen these skills internally and to make them available to as many players as possible - all this methodology and these actions will be presented towards the end of the BioMan4R2 project, in 2024, as part of deliverable D2.4 - Training for cluster managers.