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Scenario #2

CROSS- COLLABORATION FOR SUSTAINABILITY

Green Acceleration
Methodology for EU Clusters

Introduction

The challenges within the green transition are complex and require broader engagement than the usual sectors and ecosystems, locally, regionally, nationally and cross-borders. This is making the support mechanisms for SMEs to navigate these challenges more complex and in turn how cluster managers need to engage in the support of their SMEs.

Cross-collaboration can support cluster managers to help raise awareness of sustainability issues and engage local, regional, national and international stakeholders from different sectors and expertise that can help in implementing solutions while also increasing knowledge and skills among all those involved.



>> CROSS-COLLABORATION

Cross-collaboration is the process where individuals from different departments, companies, sectors or regions with different areas of expertise come together to achieve a common goal.

Cross-collaboration is seen as a key tool for addressing complex green and circular challenges.



>> CROSS-SECTOR COLLABORATION

Cross-sector collaboration is when two or more organizations work together across sectors – industry, nonprofit, and government – to achieve mutually beneficial outcomes.

Successful collaboration may lead to the formation of a cross-sector partnership, in which partners formally agree to leverage their resources and funding to work toward shared, measurable goals.



>> CROSS-BORDER COLLABORATION

Cross-border collaboration has the objective of reducing the effects of barriers, including administrative, legal and physical barriers, which are found at borders.

Local and regional authorities, organizations and companies cooperate across borders to promote regional development by improving infrastructure, by managing and monitoring common cultural and natural heritage and by reducing border in order to facilitate mobility across borders.



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Part 1

Learn





1. Cross- collaboration

Introduction

What is cross collaboration?

Cross collaboration involves the cooperative effort between individuals, organizations, or sectors from diverse backgrounds, disciplines, or industries to achieve shared goals. This approach leverages the unique perspectives, expertise, and resources of each participant to address complex challenges, drive innovation, and achieve mutual benefits.



What cross collaboration will enhance?

By combining different perspectives and knowledge bases, cross collaboration fosters creative problem-solving and the development of novel solutions. This can lead to breakthrough innovations that single-discipline teams might not achieve.

Organizations can improve their competitiveness by leveraging collaborative efforts to enter new markets, develop new products, and adopt best practices.

Regarding sustainability, cross collaboration helps address complex environmental and social challenges by integrating diverse expertise and resources to create effective, scalable solutions.

Cross collaboration is a powerful strategy for fostering innovation, efficiency, and sustainability, making it an invaluable approach for organizations looking to address complex challenges and drive growth.

The importance of cross collaboration

Cross Collaboration is important, especially when being a cluster manager, but more on that later.

There are three challenges we need to address, regarding cross collaboration. First, it is necessary to provide startups and companies with inspiration on benefits in engaging in cross collaboration with sectors and borders outside their usual “business scope” and give them examples on how to do that. We’ll address these thematics on cross sector and cross border later in this chapter.

Furthermore, cluster managers must help entrepreneurs and companies with giving them access to needed ecosystems or partners who can lift their green ambitions.

The third and last challenge we have identified concerns the development of skills needed to identify and engage the right stakeholders and collaboration partners outside their usual business scope.

Why cross collaboration is important for cluster managers?

Cluster managers play a pivotal role in facilitating cross collaboration by:

- Creating Collaborative Environments, hence establishing platforms and networks that encourage communication and cooperation among diverse organizations.
- Identifying Synergies, what is recognizing complementary strengths and capabilities of cluster members to create mutually beneficial partnerships.
- Managing Diversity: Handling the challenges of diverse teams by promoting inclusive practices and resolving conflicts effectively.

By focusing on cross collaboration, cluster managers can drive sustainability and business growth within their ecosystems and beyond. Encouraging collaborations across sectors and borders not only enhances innovation and competitiveness but also ensures that clusters remain resilient and adaptable in a rapidly changing global landscape. Effective cross collaboration ultimately leads to stronger, more dynamic clusters (and their members) that are well-equipped to tackle future challenges and seize new opportunities.

Key concepts

What are the key concepts and models behind Cross Collaboration?

#1 *Diversity of perspective*

The three most important concepts behind cross collaboration are underlined here. First, there is the Diversity of perspective. This concept leverages the unique viewpoints and expertise of various stakeholders to enhance problem-solving and decision-making. The diversity fosters innovative solutions that might not be achieved through siloed efforts.

T-shaped profile:



Figure 1. T-shaped skills, as described by Guest and Brown (Guest, 1991; Brown, 2010)

In order to activate and find the right stakeholders and foster innovative solutions, cluster managers need to have a T-profile.

The T-shaped model emphasizes the combination of deep knowledge in a single area (the vertical bar of the T) with a broad understanding of a wide range of other areas (the horizontal bar of the T). It supports the idea that individuals with T-shaped skills are more effective in cross-functional teams because they can contribute specialized

expertise while also collaborating broadly across disciplines.

Encouraging the development of T-shaped skills within cluster organisations helps ensure that members can both contribute deeply in their areas of expertise and effectively collaborate across various functions.

#2 Open Innovation

The concept behind open innovation and creativity is to foster creative problem-solving and developing novel solutions by integrating diverse ideas and practices.

Proposed by Henry Chesbrough, the open innovation model advocates for the use of external ideas and pathways to market in conjunction with internal R&D. It posits that companies can and should use external and internal ideas to advance their technology.

Through cross collaboration, organizations can tap into a wider pool of ideas and technologies, driving innovation by combining internal and external sources of knowledge.

Closed innovation process:

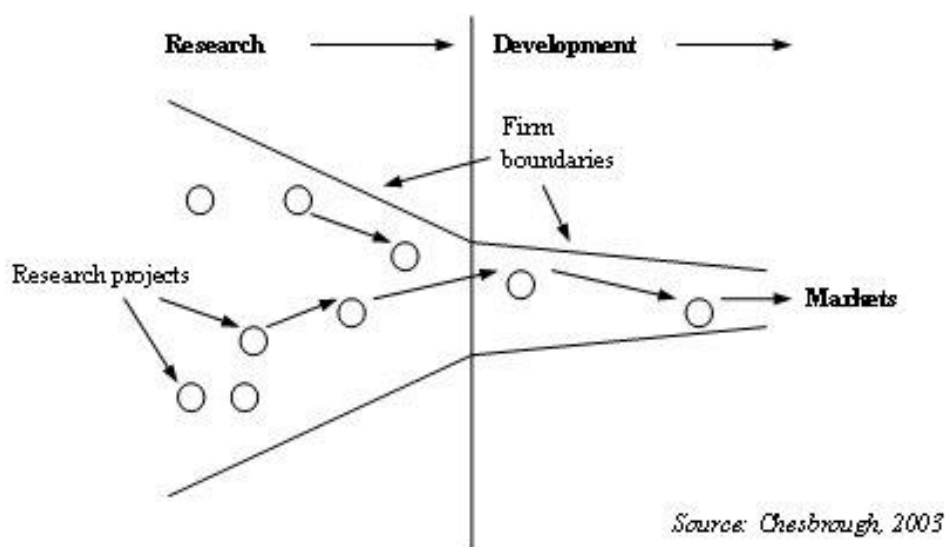


Figure 2. The closed innovation and open innovation paradigm (Chesbrough, 2003)

As illustrated in the model above the innovation process in a closed innovation process is constrained by the firm boundaries.

Open innovation model:

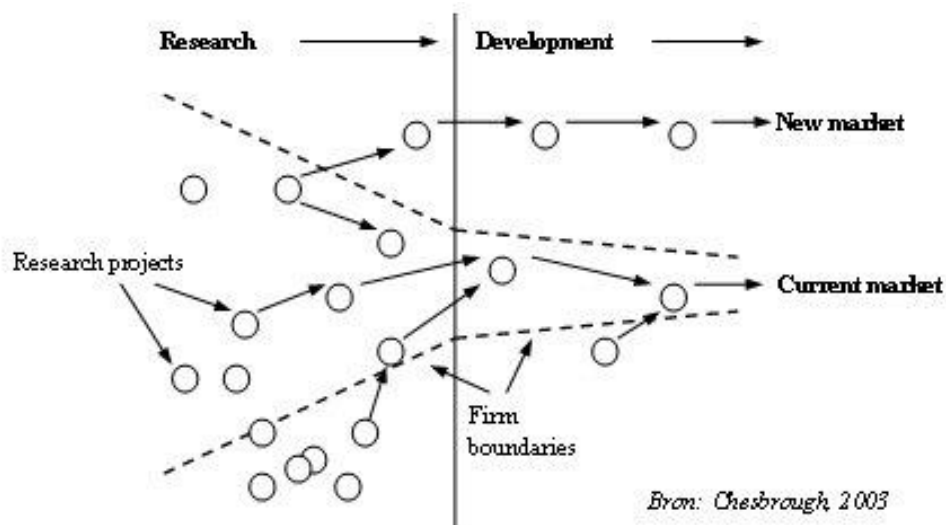


Figure 3. Closed and Open Innovation (Chesbrough, 2003)

Open innovation can be described as combining internal and external ideas as well as internal and external paths to market to advance the development of new technologies (Chesbrough, 2003)

The open innovation (OI) process differs from the closed innovation, as the principles in OI are that not all the smart people work for us, no matter how great and big a company we are. Therefore, the organisation must tap into the knowledge and expertise of bright individuals outside the company.

Henry Chesbrough's Open Innovation model, introduced in 2003, emphasizes the importance of leveraging external ideas and paths to market in addition to internal ones. For cluster managers, who oversee the collaborative networks of interconnected businesses, academic institutions, and other entities within a specific region or industry, Chesbrough's model can be a game-changer in fostering innovation and competitive advantage.

- 1. Harnessing External Knowledge:** Cluster managers can facilitate the flow of external knowledge into the cluster. By encouraging partnerships with universities, research

institutions, and other clusters, managers can introduce fresh perspectives and cutting-edge technologies. This can be done through joint research projects, shared R&D facilities, and knowledge exchange programs, ensuring that cluster members are continuously exposed to new ideas and innovations.

- 2. Encouraging Collaborative Networks:** Open Innovation thrives on collaborative networks. Cluster managers can create platforms and opportunities for collaboration among member organizations. This could include organizing innovation forums, workshops, and networking events where companies can share challenges and solutions. By fostering a culture of trust and openness, managers can help break down silos and encourage the free flow of ideas and expertise.
- 3. Accessing and Developing External Markets:** Chesbrough's model highlights the importance of not just generating internal innovations but also exploiting external paths to market. Cluster managers can support companies in identifying and accessing new markets through partnerships and alliances. They can facilitate connections with global markets and potential customers, helping cluster members to scale their innovations more effectively.
- 4. Utilizing External Innovation Processes:** Cluster managers can promote the use of external innovation processes such as crowdsourcing, open competitions, and hackathons. These initiatives can bring in novel solutions and fresh talent from outside the cluster. By integrating these external inputs with internal capabilities, cluster members can accelerate the innovation process and enhance their competitive edge.
- 5. Supporting Intellectual Property Management:** Effective IP management is crucial in an Open Innovation framework. Cluster managers can provide support and guidance on IP issues, helping companies to navigate the complexities of

protecting and sharing intellectual property. This includes creating IP sharing agreements that allow for the collaborative use of patents and technologies while safeguarding the interests of all parties involved.

- 6. Facilitating Knowledge Spillovers:** One of the key benefits of clusters is the potential for knowledge spillovers. By adopting an Open Innovation approach, cluster managers can maximize these spillovers, ensuring that the benefits of individual innovations are distributed across the cluster. This can lead to a more dynamic and innovative ecosystem where collective learning accelerates the overall growth and competitiveness of the cluster.

In summary, Chesbrough's Open Innovation model provides a valuable framework for cluster managers to enhance collaboration, access external knowledge, and optimize innovation processes. By embracing this approach, cluster managers can drive sustained innovation and growth within their clusters.

#3 Ecosystem mapping

Ecosystem mapping is a critical tool for understanding and enhancing innovation ecosystems. According to the Danish Design Center's framework, this process involves identifying and visualizing the stakeholders, their motivations, resources, and interactions within the ecosystem.

>> External actors

Actors that have a specific interest in the success or failure of the system

>> Consumers

Actors interested in consuming, utilizing, the value that is created through and in the ecosystem.

>> Collaborators

Actors interested in providing value on the supply side of the ecosystem and seeking opportunities to engage deeper.

>> Value Co-creators

Actors that create additional value and collaborate with ecosystem initiators with a deeper relation (partnerships)

>> Ecosystem initiators

Actors with a vision which binds a group together in what can be referred to as an ecosystem.

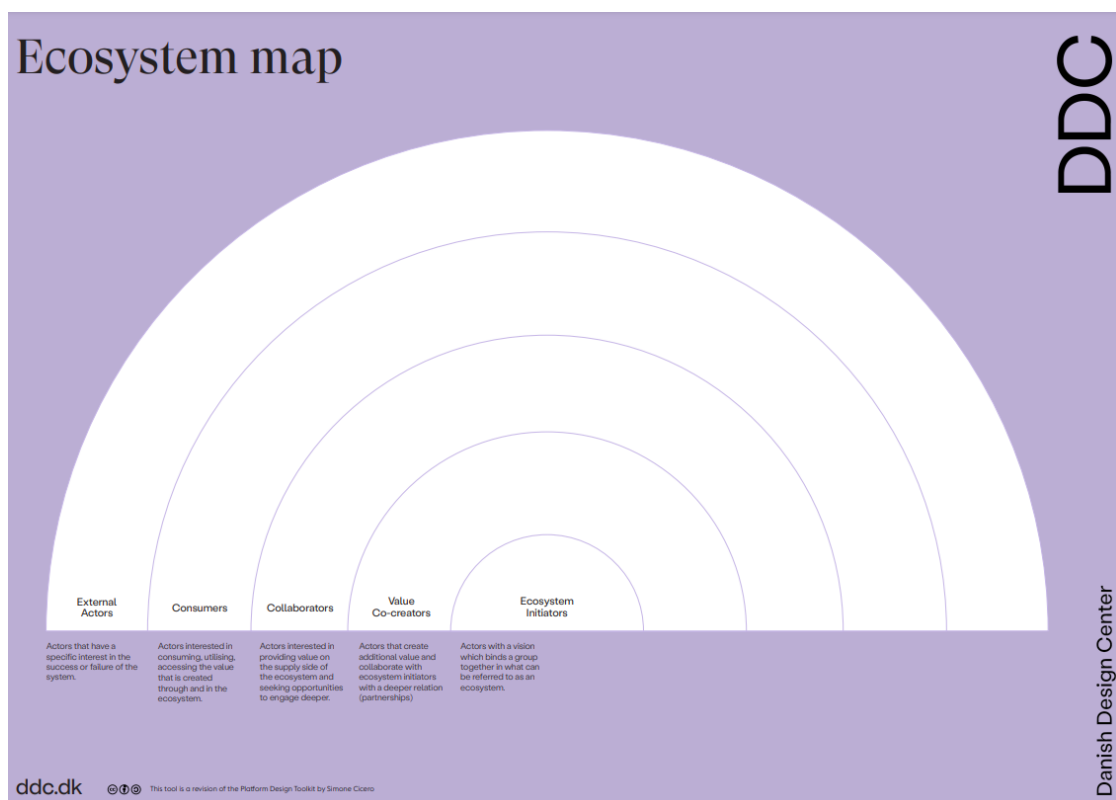


Image 1. Ecosystem map. Source: [Danish Design Center](https://www.danishdesigncenter.com/).

To go further

Do you want to learn more about cross-collaboration?

On T-Shaped Profile

- Brown, T., Katz, B. (2009). Change by Design: How Design Thinking Transforms Organizations and Inspires Innovation. New York, NY, USA: HarperCollins.

On Open Innovation

- Chesbrough, H. (2003). "[Open Innovation: The New Imperative for Creating and Profiting from Technology](#)". Harvard Business School Press

On Ecosystem mapping

- Danish Design Center <https://ddc.dk/tools/tool-05-ecosystem-mapping>

The background of the slide is a repeating pattern of overlapping 3D wireframe cubes. The cubes are drawn with thin black lines, creating a sense of depth and geometric complexity. They are scattered across the page, with some appearing more prominent than others due to their position and orientation.

2. Cross-sector collaboration

Introduction

Cross sector collaboration

Cross-sector collaboration is when two or more organizations work together across sectors – industry, nonprofit, and government – to achieve mutually beneficial outcomes. Successful collaboration may lead to the formation of a cross-sector partnership, in which partners formally agree to leverage their resources and funding to work toward shared, measurable goals.

What does cross sector collaboration enhance?

A well-designed and effective cross-sector partnership benefits partners through:

>> **Increased scale**

Successful partnerships leverage combined resources to reach more people and amplify impact and results.

>> **Replicability and sustainability**

Committed private sector partners can transform an otherwise time-bound development investment into a long-term, market-driven, scalable initiative. For companies, partnership success can encourage sustained and expanded investment and act as a blueprint for other regions and issues.

>> **Improved effectiveness**

Shared expertise and knowledge can spark innovation and unlock new opportunities and networks. Collaboration with trusted organizations or agencies can also help companies gain social license to operate.

>> **Better efficiency**

Coordination improves alignment and accelerates success while reducing individual funding commitments.

>> **Systemic Change**

Increased visibility, greater spheres of influence, and coordinated collective action and co-investment improve our chances of progressing toward the sustainable development goals and tackling the complex global challenges.

Key concepts

#1 Skills required on sector specific collaboration

Cross-sector collaboration requires specific skills that build on the foundational skills used in cross-collaboration but are tailored to bridge gaps between distinct sectors. It's important to note, again, that cluster managers don't necessarily need to be sector experts but should possess the skills and networks to facilitate effective cross-sector collaboration.

Often, problem-owning companies are dependent on technological solutions from other sectors in order to solve their challenge, which is why clusters also needs to work together. Here are some key skills necessary for effective cross-sector collaboration:

>> Networking building and management

Cluster managers need to develop and maintain a robust network of contacts across various sectors. Their role is to connect stakeholders, fostering relationships that encourage collaboration. Again, we should highlight the importance of Open Innovation (Chesbrough, 2003) which we have dived into previously.

>> Facilitation and coordination

Effective facilitation skills are essential to guide discussions, align interests, and ensure productive interactions. Coordinating meetings, workshops, and joint initiatives helps keep the collaboration on track.

>> Communication and Translation

Cluster managers must be adept communicators who can bridge language and conceptual gaps between sectors. They translate sector-specific jargon and concepts into common terms to ensure mutual understanding across sectors.

This is of great importance, as different sectors speak different “languages”, hence cluster managers from different organisations must communicate first and agree how best to make their respective members collaborate.

>> Resource Mobilization

Identifying and leveraging resources from different sectors is crucial. This includes financial, technical, and human resources that can be pooled to support collaborative projects.

#2 The need of a broker

The role of a cluster manager is oftentimes related to the role of a broker. Especially when it comes to cross-sector collaboration and partnership formations, which is why we here will introduce you to Ronald Burt’s work on cross-sector collaboration and the role of the broker.

Here we have highlighted the three most important concepts and models on his research regarding cluster managers, but if you want to read more, please look in the “To go Further” section, at the end of this chapter.

- **Brokerage Roles:** Burt emphasizes the importance of brokerage roles in networks, where individuals or organizations act as intermediaries between different sectors. These brokers play a crucial role in facilitating the flow of information, resources, and opportunities across sectors, thereby enhancing collaboration, innovation, and economic development.
- **Structural Holes:** Burt introduced the concept of structural holes, which are gaps or weak ties between different clusters or sectors within a network. Brokers who bridge these structural holes by connecting otherwise disconnected

clusters gain access to unique information and opportunities, thereby gaining a competitive advantage. Understanding and leveraging structural holes can promote cross-sector collaboration and knowledge transfer.

- **Social Capital:** Burt's work underscores the role of social capital in facilitating collaboration across sectors. Social capital refers to the resources embedded in social networks, including trust, reciprocity, and shared norms. By cultivating social capital and building strong ties within and between sectors, stakeholders can enhance their capacity for collaboration and collective action.

By understanding these concepts and leveraging them effectively, cluster managers can facilitate the flow of information and resources across sectors, leading to innovation, knowledge transfer, and economic development

To go further

Do you want to learn more about cross-sector collaboration?

On Resource dependency Theory

- <https://www.jstor.org/stable/2393885?origin=crossref>

On network capabilities: Brokerage as a bridge builder

- Network Capabilities: Brokerage as a Bridge Between Network Theory and the Resource-Based View of the Firm. First published February 2021
<https://journals.sagepub.com/doi/abs/10.1177/0149206320988764>

The background of the slide is a repeating pattern of overlapping wireframe cubes. Each cube is drawn with thin black lines, showing its three-dimensional structure. The cubes are oriented in various directions, creating a sense of depth and movement. They overlap each other, with some appearing in front of others, which adds to the complexity of the pattern.

3. Cross-border collaboration

Introduction

Cross-border collaboration

Cross-border collaboration has the objective of reducing the effects of barriers, including administrative, legal and physical barriers, which are found at borders. Local and regional authorities, organizations and companies cooperate across borders to promote regional development by improving infrastructure, by managing and monitoring common cultural and natural heritage and by reducing border obstacles such as differences in national regulation to facilitate mobility across borders.

The European programs are a strong driver of cross-border collaboration with a wide range of programs and co-operation activities such as Horizon Europe, Interreg, Erasmus+ etc.



Why is it important for cluster managers?

Cross-border collaboration is crucial for cluster management as it enables access to global markets, allowing local businesses to expand their reach and enhance competitiveness. It fosters the exchange of knowledge, expertise, and best practices, which drives innovation and technological advancement within the cluster. By collaborating internationally, clusters can leverage diverse resources, capabilities, and complementary assets, achieving economies of scale, reducing costs, and enhancing overall productivity.

Furthermore, cross-border partnerships provide valuable opportunities for talent development and cultural exchange, which enhance the skills, creativity, and adaptability of the workforce. Exposure to diverse perspectives and practices encourages innovation and resilience within the cluster.

Addressing global challenges, such as sustainability, climate change, and supply chain disruptions, requires international cooperation and collective solutions. Cross-border collaboration enables clusters to tap into global expertise and resources, fostering effective responses to these complex issues.

Additionally, cross-border collaboration strengthens the cluster's influence in policy-making processes at regional, national, and international levels. By forming alliances and partnerships with stakeholders from different countries, clusters can advocate for favorable regulations, standards, and policies that support their growth, competitiveness, and sustainability.

Overall, cross-border collaboration is essential for ensuring the resilience, growth, and sustainability of clusters in an interconnected global economy, enabling them to thrive in a rapidly evolving landscape.

Key concepts

#1 *Diamond Model of National Advantage*

Developed by Michael Porter, the Diamond Model of National Advantage emphasizes four key determinants of a country's competitiveness: factor conditions, demand conditions, related and supporting industries, and firm strategy, structure, and rivalry.

Cluster managers can use this model to analyze the competitive advantages and disadvantages of different countries or regions and identify opportunities for cross-border collaboration based on complementarities in factor endowments, market demand, and industry dynamics.

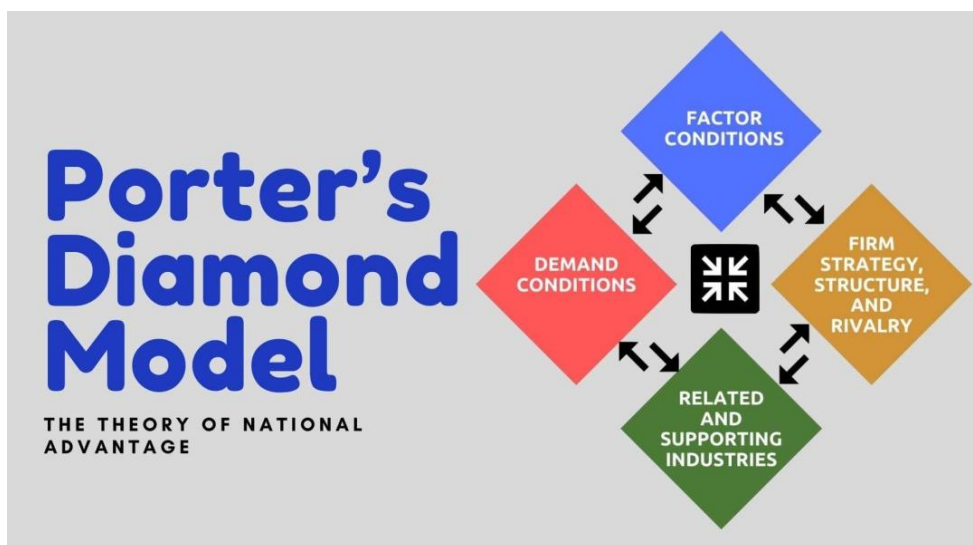


Image 2. The Diamond Model of Michael Porter.

>> Factor Conditions

- **Basic Factors:** Consider the natural resources, climate, geographic location, and demographics within the cluster. These provide the foundational advantages or limitations that the cluster can leverage or need to overcome.
- **Advanced Factors:** Focus on the availability of skilled labor, robust infrastructure, technological capabilities, and access to

capital. These are crucial for fostering innovation and competitiveness and are often the result of sustained investment and development within the cluster.

>> Demand Conditions

- **Nature of Home-Market Demand:** Assess the local market's sophistication and specific requirements. A demanding local market drives firms within the cluster to innovate and meet high standards, which can translate into a competitive edge in global markets.

>> Related and supporting industries:

- **Identify and nurture strong local suppliers and supporting industries:** These relationships enhance innovation through collaboration and efficient supply chains, providing cost-effective inputs and fostering a network of collaborative innovation within the cluster.

>> Firm strategy, structure, and rivalry

- **Company Strategy and Organizational Structure:** Understand how firms within the cluster are managed and organized, including their individual goals and strategies. These factors influence overall cluster competitiveness.
- **Domestic Rivalry: Promote healthy competition among local firms:** Intense rivalry drives firms to improve efficiency, innovate, and enhance quality, preparing them to compete successfully on the international stage.

By applying the Diamond Model, cluster managers can identify and leverage the unique advantages of their cluster and their cluster members, facilitating strategic cross-border collaborations that enhance their members overall competitiveness and innovation capacity.

#2 Transnational Triple Helix Model

The Transnational Triple Helix Model is pivotal for cluster managers, particularly in fostering innovation and sustainability through cross-border collaborations. This model emphasizes the integration of university, industry, and government interactions on a global scale, facilitating the exchange of knowledge, technology, and resources across national boundaries.

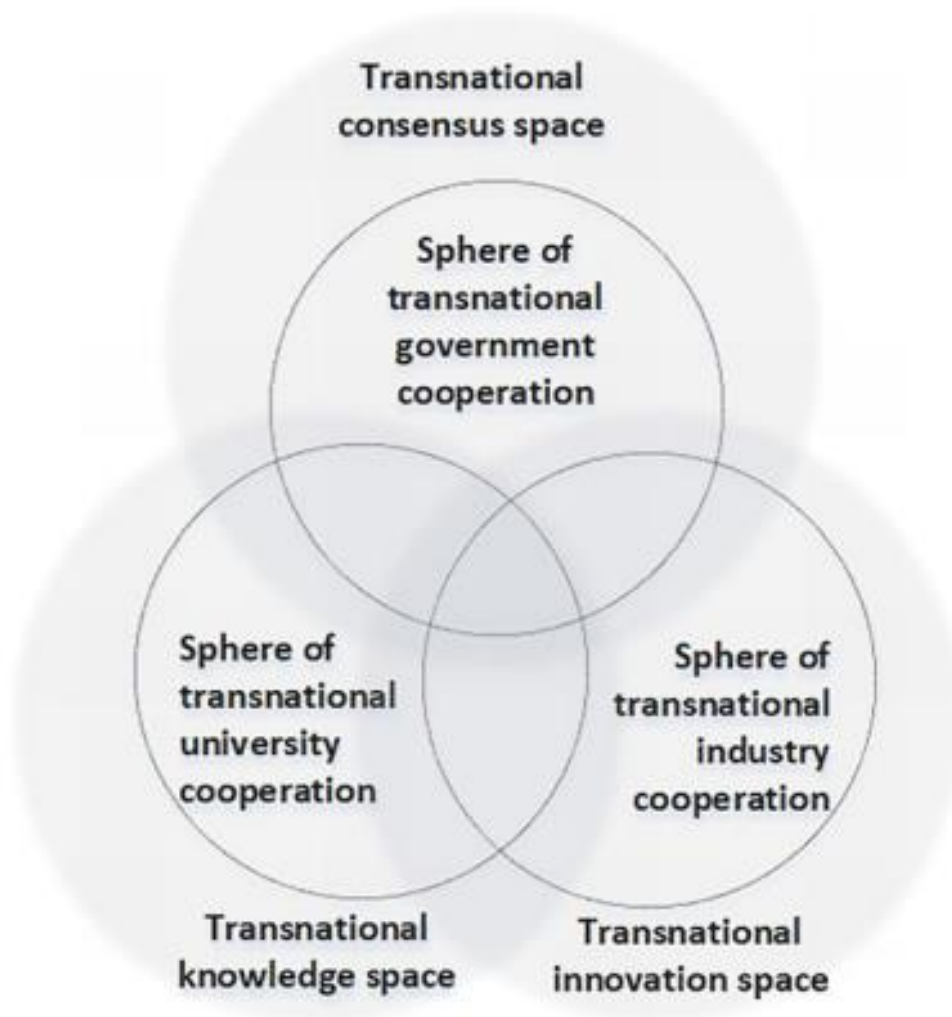


Figure 4. Transnational Triple Helix Model Source: Modified from Cai et al. (2019: 8)

Key concepts of the Transnational Triple Helix Model include:

>> Hybridization of Institutional Roles:

Universities, industries, and governments collaborate, crossing traditional boundaries to innovate and drive economic development. This hybridization leads to the creation of new institutional and social formats for knowledge production, transfer, and application.

>> **Reciprocal Relationships:**

The model highlights the dynamic and reciprocal relationships between the three spheres (university, industry, government) at different stages of knowledge creation and dissemination, contributing to robust innovation ecosystems.

>> **Global Knowledge Networks:**

By promoting transnational cooperation, the model helps cluster managers leverage global knowledge networks, enhancing local innovation capabilities and integrating diverse perspectives and expertise.

>> **Sustainable Innovation:**

The Triple Helix Model supports sustainable innovation by encouraging the flow of information and collaboration among the three sectors. This sustainability is crucial in addressing global challenges and ensuring long-term economic growth and environmental stewardship.

To go further

Do you want to learn more about cross-border collaboration?

On Clusters and the “new” microeconomics of competition

- Zhu, J. (n.d.). Modeling the evolution of knowledge with bibliometric indicators. CiteSeerX.
<https://citeseerx.ist.psu.edu/document?repid=rep1&type=pdf&doi=a8f495264b07f8d7f701ca659c5c4a643d78bf5c>

On The Triple Helix Model: Past, present, and future

- Cai, Y., & Etzkowitz, H. (2020). Theorizing the Triple Helix model: Past, present, and future. *Triple Helix*, 7(2-3), 189-226.
<https://doi.org/10.1163/21971927-12340003>
- Triple Helix Innovation Spiral: <https://www.mdpi.com/2071-1050/11/17/4633>
- Transnational University-industry co-innovation networks
<https://www.mdpi.com/2071-1050/11/17/4633>



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Part 2

In practice

Learn from others

How is cross collaboration applied in practice? Have a look at the following stories compiled under the ENDURANCE project, which provide concrete examples of SMES and cluster practitioners who work with cross collaboration in practice.

endurance-accelerator.eu/video-toolkit





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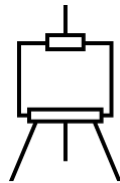
Part 3

Get equipped

Get equipped

In this section we introduce you to specific tools and canvas that can support you in working more with cross collaboration across sectors, borders and sometimes both at the same time.

These tools can be used individually to understand the potentials in an open innovation process and work across sectors and borders together with your SME or startup in order to help them see the potential in cross collaboration.



Tool 1: Ecosystem Mapping and T-shaped Profile



Tool 2: Resource Based View



Tool 3: Open Innovation Approach



Tool 4: Strategic Diamond of National Advantages





CLUSTERS



SMES & STARTUPS



BOTH

Take aways

In this module, we have learned that cross-collaboration is essential for fostering innovation, driving economic growth, and addressing complex global challenges. It involves the interaction of diverse stakeholders across different sectors, regions, or countries, pooling their knowledge, resources, and expertise to achieve common goals.

The essence of cross-collaboration lies in leveraging the unique strengths of each participant to create synergies that lead to innovative solutions and sustainable outcomes. By integrating perspectives from academia, industry, and government, cross-collaboration enhances problem-solving capabilities and accelerates the development and dissemination of new technologies and practices.

Key benefits of cross-collaboration include increased access to resources, expanded networks, and improved adaptability to changing market conditions. It also fosters a culture of continuous learning and mutual support, where knowledge flows freely between participants, leading to more effective and impactful outcomes.

For cluster managers, cross-collaboration is particularly important as it enhances the competitiveness of their clusters by facilitating international partnerships and access to global markets. It also helps in building robust innovation ecosystems that can respond effectively to local and global challenges.

References

- Walsham, G. (1997). Actor-network theory and IS research: Current status and future prospects. In A. S. Lee, J. Liebenau, & J. I. DeGross (Eds.), Information systems and qualitative research (pp. 466-480). Springer. https://doi.org/10.1007/978-0-387-35309-8_23
- Wells, P. (n.d.). Creating clusters of change: Manual for facilitators. Retrieved from https://example.com/manual-creating_clusters-of-change.pdf
- Geissdoerfer, M., Morioka, S. N., de Carvalho, M. M., & Evans, S. (2019). Business models and supply chains for the circular economy. Sustainability, 11(633), 1-16. <https://doi.org/10.3390/su1104633>
- Cai, Y., & Etzkowitz, H. (2020). Theorizing the Triple Helix model: Past, present, and future. Triple Helix, 7(2-3), 189-226. <https://doi.org/10.1163/21971927-12340003>

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