European Observatory for Clusters and Industrial Change

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#EOCIC

This policy briefing report was carried out for the European Commission by

Authors:

Julie Pellegrin (CSIL)
Louis Colnot (CSIL)

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Selection as one of 10 regions in industrial transition

The customised advice on modern cluster policy in support of industrial modernisation provided to the 10 regions in industrial transition is funded by the Directorate-General for Internal Market, Industry, Entrepreneurship and SMEs (DG GROW), as part of the European Observatory for Clusters and Industrial Change (EOCIC). The regions were selected as a result of an open call for expression of interest, published and assessed by the Commission services. The Commission launched a first call for expression of interest on 29 September 2017 and, as a result of demand from regions, a second call was launched on 14 December 2017.[1]

The following regions were selected[2]:

- Cantabria (Spain)
- **Centre Val de Loire (France)**
- East & North Finland
- Hauts-de-France (France)
- Lithuania
- North-Middle Sweden
- Piemonte (Italy)
- Saxony (Germany)
- Slovenia
- Wallonia (Belgium)

The aim of the work being provided by the EOCIC to 10 regions in industrial transition is to define a set of actions in the form of a comprehensive strategy to foster regional economic transformation, identify collaboration and funding opportunities and connect with other regions in regional and cluster partnerships.

This pilot will help test new approaches to industrial transition and provide the European Commission with evidence to strengthen post-2020 policies and programmes.

The output of the first phase of the EOCIC advisory services was an assessment report, which summarises the key challenges of industrial modernisation for the region and the potential policy directions. The second phase of the EOCIC advisory services will build on this report to develop concrete policy proposals for each industrial transition region. DG GROW and the EOCIC are working closely with the Directorate-General for Regional and Urban Policy (DG REGIO) and the OECD to provide advice services for the pilot regions.

More information on the activities carried out by the EOCIC is available at the end of this report.

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[1] Details on the selection procedure are available at:
https://ec.europa.eu/regional_policy/en/policy/themes/industrial-transition/
[2] 12 regions were initially selected for the overall process of the project on pilot regions in industrial transition, of which 10 then engaged with the project through to the final stages of the work carried out by the EOCIC.

1. Introduction

1.1. Aims and objectives of the exercise

The aim of this exercise is to **support the regional authorities of Centre-Val de Loire in defining actions that facilitate the region's industrial transformation.** EOCIC Experts have worked in close collaboration with the expert from the AMI - CEI (Appel à Manifestation d'Intérêt - Call for Expression of Interest) list supported by DG REGIO to ensure in-depth analysis, as well as the consistency of the proposed actions.

As different regions across Europe are characterised by different patterns of strengths and weaknesses, a tailored approach has been adopted to designing suggested lines of actions for Centre-Val de Loire. In particular, specific emphasis has been placed on building on existing resources and consolidating ongoing work and initiatives. This will make it possible to benefit from potential synergies and from the momentum currently to be seen in the region, for instance in terms of stakeholder mobilisation and political commitment to industrial modernisation through the deployment of the Smart Specialisation Strategy.

This document builds on the assessment report to summarise the challenges and barriers to and drivers of industrial modernisation in Centre-Val de Loire before outlining potential interventions that could help tackle the challenges and optimise the drivers.

This document includes the main challenges for the region through a SWOT (Strengths, Weaknesses, Opportunities and Threats) analysis and a PEST (Political, Economic, Socio-cultural and Technological) analysis. Both are described in Chapter 2. Based on these challenges, Chapter 3 provides a customised strategy designed to address the needs and challenges identified. Chapter 4 presents two specific recommendations for policy intervention. Their respective action plans are in Chapter 5.

The report is based on extensive desk research, a large number of interviews, a study visit in Centre-Val de Loire (20 June 2018) and a policy review meeting (20 December 2018). Some 40 people were reached through this process, including the representatives of all cluster organisations active in the region.

1.2. Key economic and innovation indicators for the pilot region

In 2017, Centre-Val de Loire had a gross domestic product (GDP) of EUR 27 800 per capita, which is below the EU level of EUR 30 000 and the national figure (EUR 34 300). Of the 10 pilot regions, Centre-Val de Loire ranks sixth behind North-Middle Sweden, East & North Finland, Piemonte, Saxony and Wallonia.

Figure 1 combines selected economic indicators for the 10 pilot regions. It shows that both Centre-Val de Loire's GDP per capita and employment rates are close to the median of all 10 pilot regions and below the EU level. With 34.5% of employees with a higher education degree, Centre-Val de Loire ranks seventh among the pilot regions and has a marginally above-average level of highly educated employees compared to the EU average (34.4%), but a below-average figure compared to the national rate (40.0%). Compared to the European Union, neither France nor Centre-Val de Loire are specialised in manufacturing.

Figure 1: Selected economic data for the 10 pilot regions: GDP/capita, Employment rate, Share of employees with higher education degree and Specialisation in manufacturing
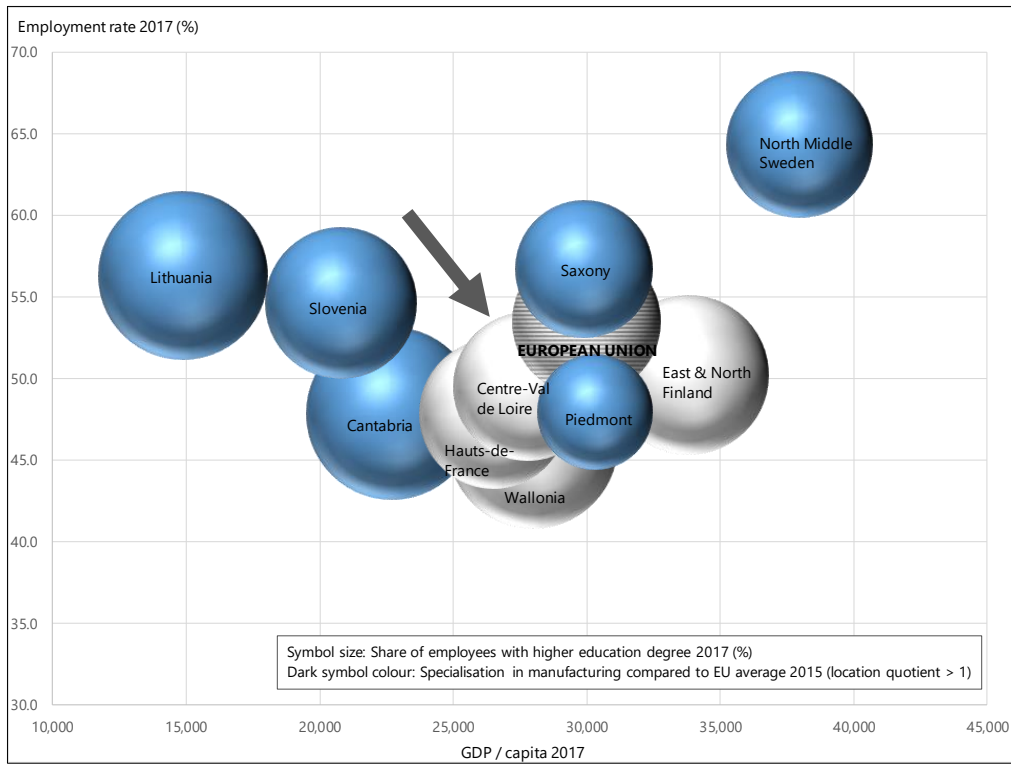
Source: EOCIC, based on Eurostat data and own calculations

Centre-Val de Loire's share of employment in high-technology sectors (high-technology manufacturing and knowledge-intensive high-technology services) is below the European and the national averages. The business enterprise sector in Centre-Val de Loire spends a higher percentage of total business expenditure on R&D than the French or European Union averages. However, the region's share of R&D personnel in the business sector is below the national and the EU figures (figure 2).

Figure 2: Selected technological indicators for Centre-Val de Loire
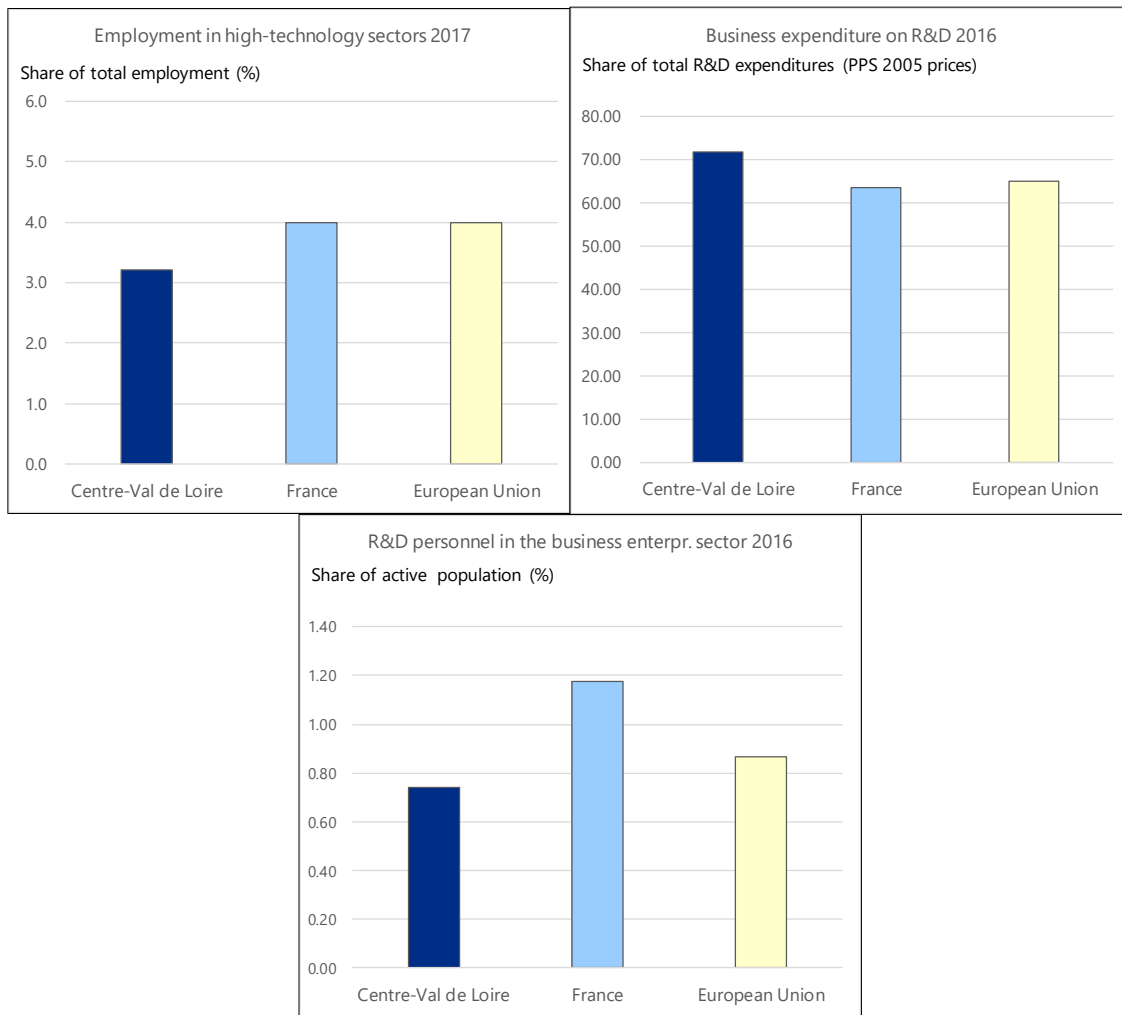
Source: EOCIC, based on Eurostat data and own calculations

In order to provide insights into industrial modernisation EOCIC has drawn up composite indicators on seven dimensions: Evolution towards a more innovative regional economy; New and emerging technologies; Digitalisation; Firm investments; Internationalisation; Creativity; and Entrepreneurship. Each dimension is represented by a set of specific indicators, which are condensed to a composite indicator. Figure 3 presents the results for those seven dimensions in Centre-Val de Loire. The highest scores are achieved for firm investments and digitalisation, while the lowest score is for the dimension of new and emerging technologies. The pilot region generally scores below the national and the EU levels.

Figure 3: Composite indicators for Industrial Change: Centre-Val de Loire
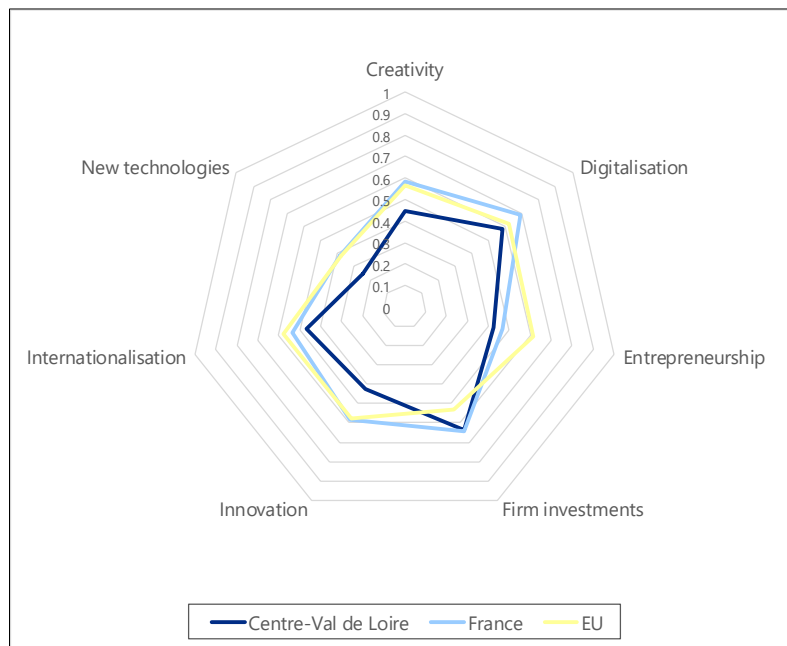
Source: EOCIC, based on various data sources and own calculations

Figure 4 shows the most recent total composite indices for industrial change and the total number of clusters stars in the pilot regions (NUTS 2 level). The composite indices show industrial change in a range between 0.4 and 0.8 between 10 and 70 in the 10 pilot regions, and the total number of cluster stars in a range between 10 and 70. Five NUTS 2 regions have 45 or more cluster stars. Piemonte is the clear leader (69 stars). With a total of 49 cluster stars, Centre-Val de Loire also belongs to this group. By contrast, the region is not among the leading pilot regions on the composite index for industrial modernisation. Figure 4 shows that Walloon Brabant heads the industrial change rankings with a score of 0.751 on a scale of 0 to 1.

Mapping the pilot regions' industrial change and cluster stars reveals three different types of region: (1) high number of cluster stars, but moderate composite index of industrial change (below 0.5) (Piemonte, Nord-Pas-de-Calais, Picardie, Centre-Val de Loire, Lithuania), (2) regions with moderate figures for both indicators (below 35 cluster stars and composite indices of industrial change below 0.6) (Hainaut, Liège, Slovenia, Dresden, Namur, East & North Finland, Leipzig, Luxembourg, North Middle Sweden, Cantabria, Chemnitz), and (3) Walloon Brabant (composite index of 0.75 and 40 cluster stars.) In the second group, Hainaut, Liège and Slovenia stand out from the other regions due to the higher numbers of cluster stars. In part, this is also the case for Chemnitz, but it has a lower index for industrial change.

Figure 4: Composite indicator industrial change (total index) and cluster stars (total) for pilot regions
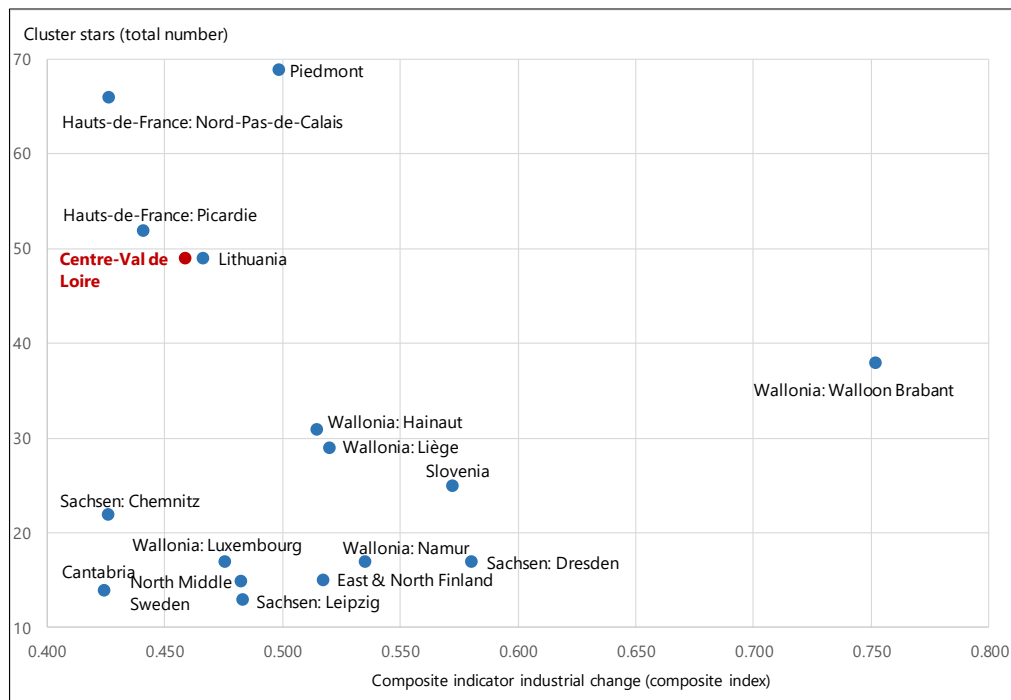
Source: EOCIC, based on various data sources and own calculations

2. Key challenges, barriers, and drivers of industrial modernisation in Centre-Val de Loire

This chapter summarises, in tabular form, the Political, Economic, Socio-cultural and Technological (PEST) framework conditions in Centre-Val de Loire (Figure 5) that were discussed in detail in the assessment report. The chapter then presents the key strengths, weaknesses, opportunities and threats (SWOT) that need to be considered in the development of the regional strategy in Chapter 3. This chapter is based on the information collected from the assessment report.

As pointed out in the assessment report, the **role of clusters is seen as important by the regional authorities to structure the economic ecosystem and contribute to the successful realisation of broad policy objectives** (e.g. by facilitating the implementation of policies on innovation and R&D). There are **11 active cluster organisations based in the region**[3], with a key **distinction between *pôles de compétitivité***, which operate as part of a national policy, **and other regional clusters**. *Pôles de compétitivité* are theoretically more oriented towards R&DI and can access some specific related funds. They are influenced by the ongoing evolution of the national policy that frames them.

The **region's major economic characteristics** are a relatively "flat" specialisation pattern, i.e. **no sector is clearly dominant** (though the region boasts excellent records in the cosmetics and pharmaceuticals and in the tourism sectors) and the **importance of component suppliers** among the region's firms, with implications for involvement in global value chains.

Figure 1Figure 5 summarises the key **PEST features, conditions and challenges for Centre-Val de Loire**, as identified and detailed in the assessment report. Many of these features relate to the fact that the region has a strong industrial tradition oriented towards production activities, with related advantages and disadvantages.

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[3] There are 13 if clusters headquartered in nearby regions and active in the region are also considered.

Figure 5: The regional ecosystem and framework conditions in Centre-Val de Loire (PEST analysis)

PEST ANALYSIS

POLITICAL	ECONOMIC	SOCIAL	TECHNOLOGICAL
• Stable region (not involved in a merger process unlike most other French regions) • Commitment to consolidation of regional cluster policy • Two types of clusters (poles de compétitivité and clusters) • Ongoing national transformations of the policy towards the poles • Complex governance involving different levels of government and stakeholders active in economic development	• Relatively flat specialisation pattern, i.e. no clearly dominant sector • High performance of tourism, cosmetics and pharmaceuticals • High importance of component suppliers among regional firms • High integration with global value chains, but with limited influence on them (decision centres outside the region) • Important sub-regional economic disparities • Industrial region but with employment decline • Difficulties in recruitment and skills mismatches	• Ageing population • Issues of attractiveness (of the region and of the industrial sector) • Influence of the Paris region (migrations, talent retention...) • Strong social cohesion • Limited entrepreneurial culture	• High-quality public research and relatively strong private R&D intensity • Presence of niches of technological excellence (e.g. metrology...) • Difficulties for SMEs to conduct R&DI activities • Difficulties related to technological transfers and digitalisation

Source: EOCIC

Table 1: Strengths, weaknesses, opportunities and threats of industrial transition Table 2: below details the **SWOT of industrial transition in Centre-Val de Loire**.

Table 1: Strengths, weaknesses, opportunities and threats of industrial transition

Strengths	Opportunities
• High political prioritisation of industrial modernisation. • Specific sectoral strengths in cosmetics, pharmaceuticals and tourism. • Good export performance of some sectors (agri-food, pharmaceuticals and cosmetics...). • Strong public R&D. • Important share of the private sector in regional R&D expenditures (ranks 3rd among French regions). • High quality of the regional Smart Specialisation Strategy (best practice at EU level). • Good access to public sources of funding (RIS). • Good quality of the social dialogue between regional stakeholders. • High quality of life.	• Consolidation of the regional economic ecosystem through enhanced coordination and mobilisation of all stakeholders involved to support companies. • Importance of component suppliers, allowing diversification of markets. • Ongoing consolidation of regional RD&I policy. • Application of ICT and other advanced production technologies to regional industries (enhanced productivity, new products...). • Improvement of the innovation and entrepreneurial culture. • Potential to benefit more from available EU opportunities (e.g. Digital Innovation Hubs, Cluster Collaboration Platform...).

Weaknesses	Threats
• Relatively limited regional specialisation • Limited cross-sectoral linkages. • Importance of component suppliers, with a limited influence on their value chains (decision centres remain outside the region). • Concentration of R&DI activities in a few sectors and in large companies. • Low levels of SME innovation[4]. • Difficulties related to human resources (skills, recruitment). • Territorial disparities (South / North). • Limited entrepreneurial culture[5]	• Limited development of cross-sectoral emerging industries. • Deindustrialisation and loss of industrial employment (10 000 industrial jobs lost between 2012 and 2016). • Ageing (30% of the regional population aged 65 or more in 2050) and additional difficulties related to human resources. • Uncertainties related to national policies supporting clusters. • Issues of territorial attractiveness (proximity of Paris). • Limited attractiveness of the industrial sector (negative image among youth...).

Source: EOCIC

The SWOT and PEST analyses above led to the identification of four main challenges that need to be tackled. This formulation took into account the preferences and priorities of regional stakeholders, in-depth analysis of the regional situation (see assessment report) and factors that can be influenced by policy measures at regional level:

1. Lack of cross-sectoral linkages and activities;
2. Skills mismatch and problems in attracting and retaining talent;
3. Weak SME innovation;
4. Low levels of entrepreneurship.

Consultations with regional stakeholders indicated that there is a consensus on the identification of these main challenges. The next chapter outlines a strategic approach that can address these challenges. This approach should favour the development of synergies between measures potentially addressing these challenges, and between these measures and existing policies.

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[4] Limited innovation performance, especially of SMEs (e.g. score of 0.39 for the knowledge linkages among innovation stakeholders, compared with an average of 0.47 among similar regions in the Regional Ecosystem Scoreboard).

[5] Score of 0.077 for entrepreneurial social and cultural norms according to the Regional Ecosystem Scoreboard - compared with an average of 0.546 for similar regions.

3. Proposed regional strategy to address the challenges

The analytical work and the consultations with stakeholders carried out in the context of the EOCIC pilot action led to the deduction that the two major and interrelated characteristics of the regional economy are the key problem driver of the challenges mentioned previously:

- The **absence of strong sectoral specialisation;**
- The **importance of component suppliers** (especially SMEs) integrated in national or global value chains, with decision centres out of reach.

The region has adopted a **proactive policy** to addressing the challenges, **combining a horizontal approach with more strategic considerations**. As is justified by the absence of clearly dominant sectorial specialisation, most regional policy measures target all companies, in general vulnerable SMEs, irrespective of their sector. However, the region also promotes Domains of Potential Specialisation (DPS) through its Smart Specialisation Strategy (S3). The regional S3 is widely recognised as a best practice at EU level, with active participation of stakeholders through a well-functioning Entrepreneurial Discovery Process and a dedicated governance arrangement. In 2018, the linkages between S3 and industrial transition were explicitly strengthened by the addition of a dedicated horizontal priority on this process in the S3.

Cluster organisations (clusters and *pôles de compétitivité*) are **important policy instruments** in this context as they are at the **nexus between the horizontal and more vertical dimensions of the region's policy approach**. On the one hand, they act as **relays for the implementation of regional and national policies on the ground**. Regional cluster organisations are heterogeneous (in terms of sectors, members, priorities, critical mass etc.) and are thus able to reach a wide variety of enterprises. On the other hand, they **are considered important in structuring the regional ecosystem** and are **expected to contribute to the concentration of resources and activities around the DPS.**

The approach and the specific measures proposed in this policy briefing report capitalise on existing regional policy initiatives and strategies. The general objective of this regional strategy for industrial change is to **consolidate regional attractiveness by fostering cross-sectoral linkages and SME modernisation.** Because of their important position in the policy setting described above, cluster organisations are the key delivery mechanism of such a strategy.

To operationalise the general objective, it is possible to formulate the following specific objectives, in which cluster organisations can play an important role:

1. **Improved collaboration:** the regional authorities acknowledge that economic support to companies and structuring of the ecosystem cannot be conducted through a single point of entry or organisation. Clusters have a clear added value here in addressing the wide and heterogeneous range of regional situations. However, this requires significant collaboration between stakeholders in order to address issues of critical mass and favour cross-sectoral activities.
2. **Improved technological and human resources:** industrial modernisation requires access to tailored support for technological and human resources. Common themes of interest that are consensual in the region include innovation, skills, digitalisation and internationalisation. This is

the case regardless of the sector (see 1). However, individual specificities must also be managed. Thus, both the access to and the instruments of support must be improved.

3. **Improved entrepreneurial and innovative attitude:** industrial modernisation implies a change of perspective and mind-set among individuals and companies. Such a comprehensive process requires appropriate outreach activities to trigger change, especially among those companies and individuals that would benefit the most from support and that it is traditionally difficult to involve. This will notably entail conveying a positive image of the region and of industrial jobs as employment opportunities, and cultural support to entrepreneurship and innovation. However, this is somewhat in contradiction with the traditionally prevalent regional culture. Clusters play a role in this respect.

The strategy will consolidate the added value of the existing cluster organisations by favouring collaboration, provision of suitable support and outreach activities. Specifically, two interventions have been identified as critical in achieving these objectives:

- **Inter-clustering activities** to promote collective solutions to common issues faced by component-supplying SMEs;
- **Coaching by experts**: individual support to SMEs delivered by experts, in areas such as digitalisation, human resources management and internationalisation.

These interventions are coherent with and complementary to the proposed **"high impact actions"** identified by the expert from the AMI (Appel à Manifestation d'Intérêt) list in the related DG REGIO pilot action, namely:

- **SME Executive Recruitment and Skills Competence Audits** (support to SMEs in their recruitment and human resources strategies);
- **Digital Transition Strategy Analysis and coaching by experts** (targeting SMEs to favour digitalisation and innovative projects);
- **Enhanced cross-sectoral collaboration among SMEs and technology providers with the support of clusters.**

Different additional elements need to be considered by this strategy, as evidenced during the meetings with regional stakeholders[6]:

1. **The fine-tuning of regional governance and collaboration between the different ecosystem stakeholders,** allowing them to reach out to companies in a variety of situations and to build common responses to wider challenges;
2. **Attention to soft, socio-cultural aspects** that are particularly critical in order to develop innovation and entrepreneurship;
3. **Easier access to and better support for technological and skills adaptation**, especially for digitalisation and SMEs;
4. **Consolidation of the policy mix and suitable instruments**, both in terms of funding and other forms of support, especially for innovation.

The figure below **maps the different elements of the proposed strategy**.

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[6] Orléans, 20/12/2018

Figure 6: Overview of the regional industrial modernisation strategy for Centre-Val de Loire

Key challenges
1. Lack of cross-sectoral linkages and activities
2. Skill mismatch and HR issues
3. Weak SME innovation
4. Low entrepreneurship

Key problem driver

No dominant sectoral specialisation and large base of component suppliers (especially SMEs)

Specific objectives

1. Improved collaboration
2. Improved technological and human resources
3. Improved entrepreneurial and innovative attitude

General objective
Consolidation of regional industrial attractiveness by fostering cross-sectoral linkages and SME modernisation

Key interventions

1. Development of inter-clustering activites
2. Tailored coaching services for companies

Results / outputs

1. Emergence of new inter-cluster and cross-sectoral linkages
2. Improved skills
3. Increased digitalisation and modernisation
4. Socio-cultural changes

4. Specific recommendations for policy intervention

4.1. Development of inter-clustering activities

4.1.1. Description

The region hosts a significant number of cluster organisations (some13, including 11 headquartered in the region). However inter-clustering activities are not fully developed for the moment.[7] Yet, inter-clustering activities have the potential to address the **three specific objectives** highlighted in the proposed approach:

- **Improved collaboration:** by definition inter-clustering activities tend to reinforce regional collaboration, not only between cluster organisations but also with other partners, regionally and outside the region, depending on the tasks
- **Improved technological uptake and human resources:** by mutualising resources to carry out common activities, cluster organisations can deliver a wider spectrum of support to their members, in particular in awareness-raising or uptake of specific technologies
- **Improved entrepreneurial and innovative attitudes:** by exchanging practices adopted to deal with common problems, inter-cluster activities contribute to changes in behaviour and mentality.

This intervention is also particularly suited to dealing with one of the main features of the regional economy, i.e. the importance of component suppliers in its industrial fabric. The latter are often locked into situations where they have little room for manoeuvre (e.g. in investments for innovation, business development – such as diversification…) and approaching them is difficult. Rather than following the objective of climbing the value chain, inter-clustering activities offer a horizontal alternative aimed at multiplying opportunities for diversification. Adopting a horizontal rather than a sectoral approach could enable cluster organisations to target these companies more efficiently.

In order to complement ongoing reflections by the regional economic development agency (Dev'Up), this recommended policy intervention is designed with **flexibility as its core tenet**. The intervention focuses on the development of **goal-oriented inter-clustering activities** linked to the key challenges identified above and tries to avoid an unnecessary additional burden for cluster managers. Practical examples show that the success of inter-clustering activities depends on the level of development of clusters and/or their lifecycle phase[8]. As regional cluster organisations exhibit a wide range of different situations relative to these parameters, it is proposed to adapt inter-clustering activities by distinguishing two different groups:

- **Group 1:** cluster organisations with a consolidated network of members, relatively significant resources and the ability to develop common projects (e.g. innovation collaboration);

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[7] Actions to develop inter-clustering activities have already been attempted in the past but failed. One reason put forward had to do with the low life expectancy of the participating clusters. Dev'Up, the regional economic development agency, organised a call in autumn 2018 to obtain expert support on issues of common interest to clusters and *pôles*: business models and self-financing.

[8] See in particular: https://www.strategie-aims.com/events/conferences/23-xxiieme-conference-de-l-aims/communications/2833-linterclustering-de-la-communaute-de-pratiques-aux-projets-collaboratifs/download

- **Group 2:** cluster organisations at an earlier phase of development (i.e. with ongoing structuring of their sector), typically with fewer available resources.

These groups should not mirror distinctions in organisations' status (e.g. *pôles* versus other forms of clusters), but rather be based on a combination of reviews of evaluations and voluntary positioning. Concretely it would entail:

- An analysis of **value chains and potential interactions** between clusters (regional authorities in collaboration with cluster organisations with support from external experts);
- A review of **actions performed** (e.g. services provided by clusters) and **potential synergies** (regional authorities in collaboration with cluster organisations);
- **Previous collaboration** between cluster organisations and their **willingness to pursue** some partnerships (cluster organisations).

In a first phase, the economic development agency and regional authorities could **constitute these groups** through a dialogue with the relevant stakeholders focused on the activities to be carried out by each group. The first group would benefit from support to innovative collaborative projects, cross-sectoral activities, search for partners to conduct such projects, use of thematic platforms (EU Smart Specialisation Platforms…) etc. The second group would be focused on benchmarking, exchanges of good practices, common generic training etc.

In a second phase, each group would **identify different projects on relevant themes** involving a modular geometry of cluster members. In order to be successful, these groups **require tutoring,** including in searching for common activities with high added value, organisation and concrete achievements. A direct implication is the necessity to devote human resources to these tasks. Two **tutors** (one per group) could be mobilised by pooling resources from cluster organisations, the economic development agency and regional authorities. These tutors would ensure the daily follow-up and coordination of the inter-clustering activities and organise regular meetings (one every three months) with cluster organisations and regional authorities. A positive spillover effect of enhanced inter-clustering activity would be an improvement in information flows and overall governance.

This intervention could first undergo **a test phase** (e.g. six months), with objectives clearly defined by the participants, and could be maintained afterwards if successful. Potential objectives include carrying out common actions (number and scope: business development events, innovation projects, common training etc.), strategic planning (publications…) etc. These objectives could be set up during the meeting launching the intervention based on a proposal from the tutors. The two tutors would monitor, collect and compile data on the achievement of objectives. They would analyse the results at the end of the test phase (about six months after the beginning of the action), highlighting rationales for the developments and potential lessons learnt. This analysis would be presented to regional authorities and cluster organisations and form the basis for the future development of the intervention.

In the longer run, the tutors could also **build bridges between clusters across the different groups**, as the cluster organisations develop or face common issues regardless of the cluster they belong to, e.g. by developing outreach activities targeting component suppliers.

This intervention is synergistic with one of the three "**high-impact actions"** identified by the AMI expert (DG REGIO), which proposes "cross-sectoral innovation vouchers". Its objective is to encourage cross-sectoral cooperation involving cooperation between SMEs across clusters to develop new services and products.[9] The operationalisation of this high-impact action could benefit from improved inter-

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[9] Cooperation would involve at least two SMEs in either resolving a technology challenge with support of a technology provider or co-designing a new service/industrial process.

clustering activities. Inter-clustering cooperation would pave the way for the identification of cooperation opportunities and open the path to specific SMEs projects funded through the voucher scheme.

Box 1: Inter-clustering activities: the example of Hamburg

Since the foundation of one the first clusters in Germany in 1997, Hamburg@work, the Hamburg Metropolitan region has continued to expand a systematic cluster policy. This is currently based on a mix of different clusters covering aviation, logistics the media, and the IT sectors in particular, as well as renewable energy, healthcare and the creative industries.[10] In this context, Hamburg's Cluster Strategy is a good example of a region, although a metropolitan area providing a number of initiatives and services targeting the **development of inter-cluster activities**

By focusing on the important role of personnel and qualifications in all companies' economic competitiveness and innovation[11], Hamburg's strategy not only aims to create the basis for **close links between all cluster stakeholders** – companies, education and training institutions, universities, research institutions, associations and societies, chambers of commerce and trade unions – but also for **inter-cluster cooperation across disciplines.** Cross-clustering is, in fact, an important feature of the strategy and was a contributing factor in the selection of Hamburg in 2014 as one of the six model regions for modern cluster policy according to the European Commission[12]. As a result, Hamburg cluster stakeholders, in conjunction with European Commission experts, are developing a cross-clustering concept for the metropolitan area in order to enhance the connection, in terms of innovation, at of **the thematic intersections of Hamburg's clusters.** These are designated as **"cluster bridges"** (Ministry of Economics, Transport and Innovation, 2016). Concretely, this includes the use of an intermediary to spot adequate training opportunities, venues for events and operations, or facilitate contact with public authorities.

Source: Ministry of Economics, Transport and Innovation, (2016). "Hamburg's Cluster Policy – Reaching the Top Together", Free and Hanseatic City of Hamburg.

4.1.2. Benefits and Costs

The key expected benefits of this intervention would be to explore the potential for complementarity and synergies between the activities of cluster members. As such, it would be instrumental in **fostering cross-sectoral fertilisation**, possibly yielding to the emergence of new areas of specialisation in the medium to long term. This is especially important for component suppliers who can take advantage of this intervention to engage in a process of **diversification** and disentangle themselves from a fragile position in value chains piloted from outside, which makes them vulnerable to decisions potentially at odds with the objectives of the region.

Another benefit of this intervention would be to deal with the **critical mass issues** that characterise some cluster organisations by improving their ability to tackle common challenges together. More generally, by adopting an adequate level of flexibility in the involvement of members and scope of common activities, it would be possible to adapt to differences in needs between cluster organisations and individual companies. It would thus be an advantage and a less costly option compared to the

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[10] See https://www.hamburg.de/contentblob/4410958/605b081c7032d3e012e14ba16663bc54/data/hamburgs-cluster-policy.pdf
[11] See https://www.hamburg.de/bwvi/experts/
[12] The other five regions are Lapland (Finland), Nord-Pas-de-Calais (France), Centro Region (Portugal), West Region (Romania) and Stockholm (Sweden).

creation of entirely new structures, such as the idea of establishing a meta-cluster for component suppliers[13].

As mentioned in the previous section, the **monitoring of actual benefits** is included in the intervention design and would be based on the tutors' analysis of objective fulfilment.

The **main costs** of this intervention would be the salaries and social security contributions for the two tutors, which can be estimated at to about EUR 70 000 yearly[14]. However, the actual costs would depend on whether the work was carried out by newly recruited individuals or by reallocating existing human resources. Depending on the resulting inter-cluster activities, extra revenue could be generated, mitigating costs as well. Additional costs would be dedicated to the organisation of meetings, about eight per year (four per group for about 10 people each), amounting to about EUR 8 000 per year[15]. This figure could be significantly reduced if these meetings were to take place using regional authorities' facilities or those of their partners. The total direct costs would thus amount to some EUR 78 000 per year, excluding potential staff costs induced by inter-clustering activities for cluster organisations.

4.1.3. Risks, obstacles and challenges

In spite of its potential benefits, the intervention would face a series of risks and challenges.

1. Difficulties related to the **mobilisation of stakeholders** in support of inter-clustering activities: management of daily activities and other high-priority issues can limit the ability and/or willingness of cluster organisations to contribute to inter-clustering activities. To mitigate this risk, the different stakeholders and the tutors would have to find a balance between activities with short-term benefits and longer-term collaborative actions
2. **Funding** could also be an obstacle for this intervention because it relies on human resources rather than on investments. Consequently, sustainability of funding and the distribution of effort between the different stakeholders should be key points for debate at the initial stages of the intervention. This risk could be alleviated by reallocating time from existing employees if appropriate.
3. **The current reorganisation of *pôles de compétitivité*** poses a practical problem related to the redefinition of the perimeter of certain *pôles*. In the short-term, these *pôles* may be busier envisaging new cooperation projects or mergers required by a national decision than in devising horizontal regional cooperation with other clusters and *pôles*.
4. **Openness** to cluster organisations beyond the regional boundaries should be an explicit objective to avoid the risk of forming a regional closed club, with limited access to outside resources.

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[13] As proposed following the 2012 evaluation by Katalyse.
[14] Based on the wages and employers' contributions for economic developers:
https://infos.emploipublic.fr/article/developpeur-economique-fiche-metier-eea-5312
[15] Including facility costs, potential catering and rough estimates of the labour costs (based on Harvard Business Review Meeting cost calculator).

4.2. Facilitation of coaching services targeting SMEs (focus on skills, digitalisation, internationalisation)

4.2.1. Description

This intervention would ease the access of SMEs to **individual and personalised support delivered by experts** (or coaches) in specific fields that are particularly decisive for their development and modernisation, i.e. digitalisation, human resource management and internationalisation. This intervention targets SME managers who often have insufficient resources to deal at the same time with daily management operations and with the definition of longer-term and more strategic development objectives. It is also especially directed at component suppliers, who are locked into unfavourable positions along value chains and see little chance of diversification. Overall, this intervention is expected to encourage attitudes that are more risk-friendly and open to innovation.

Concretely, the intervention consists in making specialised and individualised support services available to cluster members in the three fields of: digitalisation, human resource management, and internationalisation. This support service would develop in **three steps:**

- An expert establishes a personalised audit focusing on one or all of the three fields covered;
- Adoption of an action plan;
- Implementation of the action plan, with the support of the expert in charge.

The proposed intervention would build on the **rich portfolio of measures and initiatives** that already exist at both cluster and regional levels. Regional cluster organisations already provide a series of coaching and advisory services to their members. There has been a recent focus on the development of skills and competences to address perceived challenges in this area, but also for digitalisation and internationalisation. Likewise, a series of measures exist at regional level, which are either generalist (e.g. the scheme "Industry of the future" which proposes targeted coaching) or specialised in the fields of skills and human resources[16], and internationalisation[17]. As to digitalisation, this intervention could be an opportunity to identify and address possible weaknesses in the support measures in this area (in particular through the establishment of a Digital Innovation Hub – see below)[18]. Overall, rather than increasing complexity and costs by introducing additional coaching services, this intervention aims to **consolidate existing measures to make sure they concentrate on industrial modernisation**.

All clusters and *pôle* members could in principle be eligible for this support but sub-contractors within regional value chains would be given priority. Specific attention would be dedicated to SMEs with activities relevant for the development of DPS identified by the S3. Any selection of beneficiary SMEs would rest with the cluster organisations. As to the experts in charge of coaching beneficiary SMEs, they could be mobilised from among the existing regional network of "economic developers"[19] who have an in-depth knowledge of the regional ecosystem.

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[16] A large budget is available for training and long-life learning at regional level. A recent example is the joint initiative between APEC (association for the employment of managers) and Dev'Up to improve territorial attractiveness. See https://www.devup-centrevaldeloire.fr/media/etude-attractivite-centre-val-loire-2019-apec.pdf

[17] Besides national schemes, different measures are under way either at cluster level or more often piloted by Dev'Up to promote the internationalisation of regional companies (e.g. participation in fairs, technical assistance etc.)

[18] The intervention could contribute to acting as relays for other regional initiatives. An example is the measure in favour of youth entrepreneurship, PEPITE (http://www.pepite-centre.fr/). Coaches could identify companies that could act as mentors for students wishing to develop businesses.

[19] https://www.connectup-centrevaldeloire.fr/

The main feature of this intervention is that the support develops at the initiative of the coaching experts. This brings the following **advantages**:

- **Help** to SMEs to actually **express their needs** and **tailor support to these needs;**
- **Guidance** for SMEs through **the rich and sometimes complex systems of support available** to enterprises in the region, and identification of possible "holes" in this system of support;
- **Outreach** to SMEs that otherwise would not spontaneously apply for support.

This intervention is expected to have the following effects on the three specific objectives defined in Section 3:

- **Improved collaboration:** by ensuring the full involvement of clusters within future potential regional initiatives for industrial modernisation and by fostering common projects based on an inter-clustering perspective;
- **Improved technological uptake and human resources:** by making a priority of coaching services related to upskilling, digitalisation, SME innovation and entrepreneurial activities;
- **Improved entrepreneurial attitude:** by improving linkages between cluster and innovation-entrepreneurship policies through coaching services.

Because it is developed on the basis of existing support measures, a key element of the proposed intervention is to ensure a **good level of coordination** between the current coaching services delivered by cluster organisations and initiatives addressing industrial modernisation available to regional firms. In particular, complementarity is expected with the following two "high-impact actions" proposed by the AMI expert (DG REGIO):

- **SME executive recruitment and skills competence audits:** Coordination with this high-impact action should focus on the **mobilisation of cluster organisations in identifying (SMEs')** **relevant skill gaps**, but also obstacles to upskilling faced by their members, and when possible, non-members in their sector. It would then facilitate the design and implementation of better adapted coaching skills services at the regional level;
- **Digital transition strategy analysis and coaching by experts:** Coordination with this high-impact action would be similar to that for skills.

There is also a potential to develop a **digital innovation hub** in the region to complement this action in the medium term. This would ensure enhanced sustainability of coaching services targeting digitalisation. It could rely in particular on the expertise of regional technical centres.

Finally, the intervention could be implemented in correlation with the previous intervention proposed to **foster inter-clustering activities (section 4.1).** Coaching experts would be active across clusters and *pôles* and thus acquire an in-depth "cross-cluster" perspective. This would facilitate the identification of opportunities for inter-clustering activities and cooperation. Conversely, the inter-clustering activities could include work and objectives related to these coaching services. The dissemination of success stories of coached SMEs across clusters would contribute to building a sense of community and spread a positive attitude to innovation among companies.

4.2.2. Benefits and Costs

The key benefit associated with this initiative is its contribution to addressing **critical issues related to industrial modernisation** among component suppliers (i.e. digitalisation, skills mismatch) who are difficult to reach and are at risk of being trapped in unfavourable specialisation patterns. The indirect effects in terms of **behavioural change** and enhanced entrepreneurship (a more risk-taking attitude, improved innovation culture) would be as important. A set of core indicators should be adopted to

monitor progress towards objectives in terms of increased exports, digitalisation investments and recruitment. The individual action plans established for beneficiary SMEs would offer the opportunity to monitor these core indicators and could include additional specific targets. As to benefits in terms of behavioural change, they are broad and long -term, so it would be more effective to monitor them based on the satisfaction of beneficiaries.

The costs of the intervention would depend on the number of SMEs covered[20]. In principle, it would not entail significant additional cost since[21] it is based on rationalisation of existing supply of coaching services (covered by resources from cluster organisations) and other arrangements at regional level (in particular, mobilisation of existing experts acting as part of the network of "regional economic developers"). To some extent, the intervention could rely on the inter-clustering intervention costs (see above Section 4.1.2). The potential development of a Digital Innovation Hub in the medium term is more difficult to assess in terms of costs, as it depends on the scope that regional stakeholders favoured for this hub. The involvement of companies in mentoring activities for youth entrepreneurs would be encouraged using only a small fraction of the time of cluster management's team, resulting in limited cost increases.

4.2.3. Risks, obstacles and challenges

Risks associated with this intervention are related to **selection bias and content**. Due to budgetary constraints, there would have to be a selection to identify which cluster members could be beneficiaries of the measure. There is a risk that the cluster organisations would not target companies that need support the most, or for which support would represent the highest value added. Peer review and inter-cluster cooperation could potentially address this issue by improving knowledge so as to carry out an effective selection process. Moreover, as technological and competence needs tend to change rapidly, it would be important for coaches to be continually up-to-date. The management of these coaches poses a challenge from a human resource perspective. The different risks associated with this measure can be mitigated by using it in combination with innovative instruments, such as the vouchers called for by the AMI expert as a high impact action.

Last but not least, problems of **funding** could be an obstacle to the provision of coaching services on a scale that would have meaningful impacts on the regional economy.

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[20] If 50 SMEs were covered (this depends on the size of the cluster organisation), it can be estimated that the cost of establishing audit /action plans is EUR 70 000-90 000, and the follow up is EUR 30 000-40 000. Coordination costs should be added.

[21] I.e. that the cost estimated above could be (probably only partially) offset by savings made from giving up other forms of coaching or support.

5. Roadmap and action plan with activities, timeframe and actors

The proposed interventions could be rapidly deployed, together with the "high impact actions" devised by the AMI experts so as to provide a strong signal that industrial modernisation is at the heart of S3 and cluster policy. However, this should take place as part of a broader reflection on the policy mix currently deployed in the region, while in parallel pursuing and increasing link to regional initiatives with EU opportunities, thus complementing or amplifying the proposed interventions. The following initiatives are particularly relevant:

- European Strategic Cluster Partnerships for Going International (ESCP 4i) Cluster Internationalisation Programme for SMEs;
- European Strategic Cluster Partnerships for Smart Specialisation Investments (ESCP S3) Using clusters to facilitate value chain innovation and industrial transformation.

Both ESCP-S3 and ESCP-4i are important elements for helping their members (especially SMEs) face global competition as they can support interregional activities for the preparation and implementation of joint innovation and investment projects. They can also facilitate the access to other countries and regions across the EU and internationally.

Other relevant initiatives are:

- European Cluster Excellence Programme: The objective is to strengthen cluster management excellence and strategic interregional partnering to foster cluster capacity building and SME competitiveness. A call was published early 2019.
- INNOSUP-1: The Horizon 2020 INNOSUP programme aims to test new approaches for better innovation support through funding opportunities for innovation actors across Europe.

A tentative action plan of the two proposed interventions in Chapter 4 is proposed below.

Table 2: Action plan

Action	Timing of the action	Owner of the action
Inter-clustering		
Set up two cluster groups.	T_0	Regional authorities: regional council, Dev'Up and cluster organisations
Appointment of two tutors.	T_0	Regional authorities: regional council, Dev'Up, following dialogue with cluster organisations
Launch meetings of the two groups; Definition of specific inter-clustering objectives.	T_0	Regional authorities: regional council, Dev'Up, following dialogue with cluster organisations
Test phase of inter-clustering activities (daily follow-up and tutoring on the activities decided on).	From T_0 to T_0 + 3 months	Cluster organisations, regional authorities, tutors

Midterm meetings of the two groups, adjustments.	T_0 + 3 months	Cluster organisations, regional authorities, tutors
Test phase of inter-clustering activities (daily follow-up and tutoring in activities decided on).	From T_0 + 3 months to T_0 + 6 months	Cluster organisations, regional authorities, tutors
Meeting of the two groups and presentation of first results (monitoring of objectives).	T_0 + 6 months	Cluster organisations, regional authorities, tutors
Full regime of inter-clustering activities.	After T_0 + 6 months	Cluster organisations
Coaching		
Coordination with cluster organisations before the launch of coaching-related high impact actions (skills and digitalisation).	T_0	Regional authorities: regional council, Dev'Up, following dialogue with cluster organisations
Identification, briefing and management of expert coaches.	T_0	Cluster organisations, regional council, Dev'Up
Selection of beneficiary SMEs.	T_0 + 1 month	Cluster organisations
Implementation I (audits, action plans).	T_0 + 2 month	Cluster organisations
Implementation II (follow up).	T_0 + 6 month	Cluster organisations
Progress assessment.	T_0 + 6 month	Cluster organisations, regional council, Dev'Up
Retrieving feedback from the experience of high-impact actions for coaching services.	T_0 + 6 month	Cluster organisations
Creation of a Digital Innovation Hub.	Tbc	Regional authorities with EU support

European Observatory for Clusters and Industrial Change

The European Observatory for Clusters and Industrial Change (#EOCIC) is an initiative of the European Commission's Internal Market, Industry, Entrepreneurship and SMEs Directorate-General. The Observatory provides a single access point for statistical information, analysis and mapping of clusters and cluster policy in Europe, aimed at European, national, regional and local policy-makers, as well as cluster managers and representatives of SME intermediaries.

The aim of the Observatory is to help Europe's regions and countries design better and more evidence-based cluster policies and initiatives that help countries participating in the COSME programme to:

• develop world-class clusters with competitive industrial value chains that cut across sectors;
• support Industrial modernisation;
• foster Entrepreneurship in emerging industries with growth potential;
• improve SMEs' access to clusters and internationalisation activities; and
• enable more strategic inter-regional collaboration and investments in the implementation of smart specialisation strategies.

In order to address these goals, the Observatory provides an Europe-wide comparative cluster mapping with sectoral and cross-sectoral statistical analysis of the geographical concentration of economic activities and performance, made available on the website of the European Cluster Collaboration Platform (ECCP) [22] . The Observatory provides the following services:

- **Bi-annual "European Panorama of Clusters and Industrial Change"** that analyses cluster strengths and development trends across 51 cluster sectors and 10 emerging industries, and investigates the linkages between clusters and industrial change, entrepreneurship, growth, innovation, internationalisation and economic development;

- "**Cluster and Industrial Transformation Trends Report"** which investigates the transformation of clusters, new specialisation patterns and emerging industries;

- **Cluster policy mapping** in European countries and regions as well as in selected non-European countries;

- "**Regional Eco-system Scoreboard for Clusters and Industrial Change"** that identifies and captures favourable framework conditions for industrial change, innovation, entrepreneurship and cluster development;

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[22] European Cluster Collaboration Platform, *Official Website*. Available at: https://www.clustercollaboration.eu/.

- **Updated European Service Innovation Scoreboard**[23], that provides scorecards on service innovation for European regions;

- **"European Stress Test for Cluster Policy",** including a self-assessment tool targeted at cross-sectoral collaboration, innovation and entrepreneurships with a view to boosting industrial change;

- **Customised advisory support services** to twelve selected model demonstrator regions, including expert analysis, regional survey and benchmarking report, peer-review meeting, and policy briefings in support of industrial modernisation;

- **Advisory support service to European Strategic Cluster Partnerships**, in order to support networking between the partnerships and to support exchanges of successful practices for cross-regional collaborations and joint innovation investments;

- **Smart Guides** for cluster policy monitoring and evaluation, and for entrepreneurship support through clusters that provide guidance for policy-makers; and

- **Brings together Europe's cluster policy-makers and stakeholders** at four European Cluster Policy Forum events, European Cluster Days, and at the European Cluster Conference in 2019 in order to facilitate high-level cluster policy dialogues, exchanges with experts and mutual cluster policy learning. Two European Cluster Policy Forums took place in February and April 2018, and the European Cluster Conference is scheduled for 14 to 16 May 2019 in Bucharest (Romania).

- Online presentations and publications, discussion papers, newsletters, videos and further promotional material accompany and support information exchanges and policy learning on cluster development, cluster policies and industrial change.

More information about the European Observatory for Clusters and Industrial Change is available at: https://www.clustercollaboration.eu/eu-initiatives/european-cluster-observatory.

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[23] Previous versions for 2014 and 2015 were developed by the European Service Innovation Centre (ESIC), see http://ec.europa.eu/growth/tools-databases/esic/index_en.htm.

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