Innovation context within CCSIs in 5 European regions

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CCIs and INNOVATION CONTRAST

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1.Presentation

In 2019, the Basque Government started an exploration around conceptualization and exploitation of R+D+I in the cultural and creative sectors. The final report showed that the existing indicators of innovation at European and regional scale couldn't reflect the authentic levels of cultural innovation in the Basque Country.

This report led into an international project, where experts in R+D+I in Cultural and Creative Sectors and Industries (CCISs) analysed and debated models and practices about how to measure it. The conclusion was that an international case study was needed to complete the research and the Contrast Pilot Study was originated.

The **objectives** of this study are:

- Carry out a **comparative analysis of good innovation practices** to detect both elements that converge with other sectors and unique elements of cultural and creative innovation.
- Identify elements of the **regional context** that characterizes and favour the development of innovative projects in CCSIs.
- Advance in the design of operative **indicators** to monitor innovation in the cultural and creative industries in the future.

Thus, the study has an exploratory character and five regions have been identified to learn about innovation in CCSIs and their contexts. The selected regions are:

- North Rhine-Westphalia.
- Flanders.
- Piedmont.
- Catalonia.
- Basque Country.

The **methodology approach** used for the study has combined qualitative and quantitative techniques:

- Firstly, a coordinator was selected for each of the regions. These coordinators are linked to the CCSIs in each region. These five regional coordinators were asked for support in collecting information on each region (detailed regional context can be found in Annex 1).

- Secondly, these coordinators also selected between 10 and 15 good practices from their respective regions.
- These organizations constituted a broad and relevant sample (53 cases) from a qualitative perspective (more information and tabulation can be found in Annex 2). Given the exploratory and qualitative nature of the study, it is not a statistical sampling but a theoretical one: the value of the sample lies in its theoretical relevance for the study of innovation in the CCSIs.
- Participant organizations answered a questionnaire with open and closed questions. This format of collecting data offers an opportunity to best explore how organisations explain their innovative projects, a crucial topic for this study. Open-ended questions are especially interesting for exploring the types of innovation. In these cases, a content analysis is developed encoding a closed number of categories the open answers offered by the participating organizations.

It should be borne in mind that the scope of action of the study goes beyond the Cultural and Creative Industries (CCIs), considering all the sectors and their diversity of agents (Cultural and Creative Sectors and Industries, CCSIs). Thus, both the analysis presented, and the selected innovation cases refer both to the industries themselves and to initiatives of the third sector and the public sector.

The report is structured as follows:

- Chapter 2 offers a profile of each region based on basic quantitative data.
- Chapter 3 proposes analysis dimensions and key concepts to study and deepen the knowledge of innovation in CCSIs.
- Chapter 4 offers broad information of each dimension of analysis, describing and analysing the most important elements of both innovation contexts in CCSIs and participant organizations' innovative action. This section is based both by regional information and the surveys carried out by the participant organizations.
- Chapter 5 reflects on the measurement of innovation within CCSIs attending how participant organisations evaluate European Innovation Scoreboard indicators
- Finally, chapter 6 sums up the study's highlights.
- The report is completed with a section of annexes. On the annexes there are detailed information of the regional contexts and the results of the survey carried out.

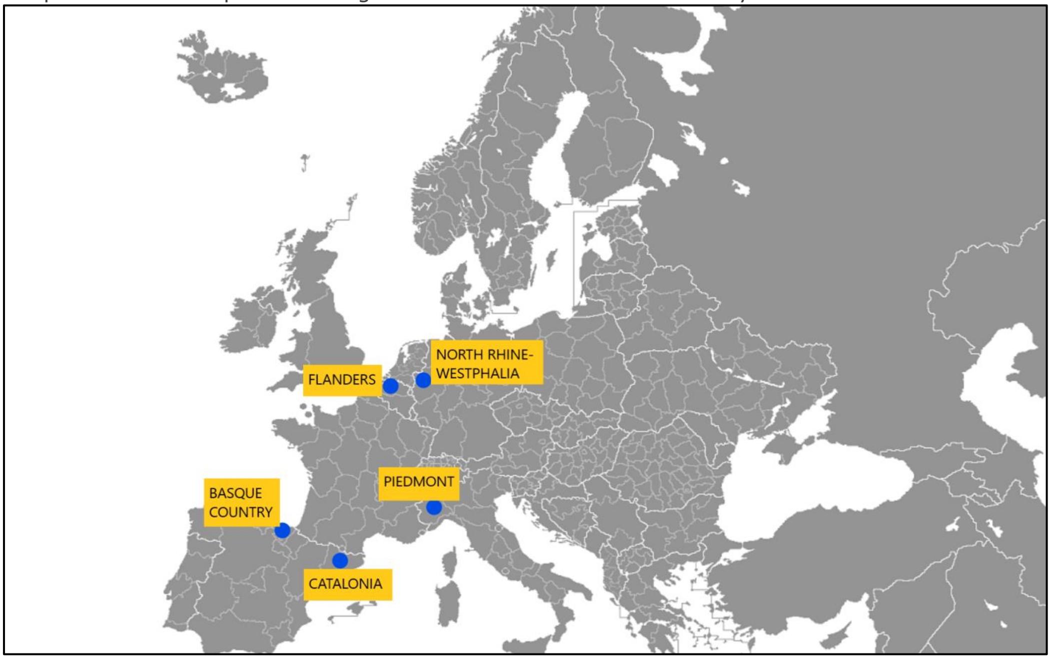
2.Quantitative introduction to regions

A quick overview on basic social indicators for each region is presented below (data about territory, population, and economy), together with data from the Regional Innovation Scoreboard (RIS) in each of its dimensions.

2.1. Territory, population, and economy

As can be seen from the map, there are two regions in Central Europe (Flanders and North Rhine-Westphalia) and the three others are in southern Europe (Basque Country, Catalonia, and Piedmont). This means that they are embedded in different institutional contexts, that could lead to differences between limits and opportunities in terms of social, cultural, and economic development.

Map 1. Location map of the 5 regions the CCSIs Contrast Pilot Study



Source: Own preparation

Nevertheless, **the five regions have a GDP per capita above the UE-27 average**, pointing out their strong economic development. **Population density is also higher**, indicating that these regions are highly developed territories at the urban level.

All of this is especially true for Flanders and North Rhine-Westphalia where, moreover, unemployment is lower, and employment is higher than in the southern regions. The Basque Country is situated, in some cases, in an intermediate position.

Graphic 1. Summary of basic regional socio-demographic and socio-economic data

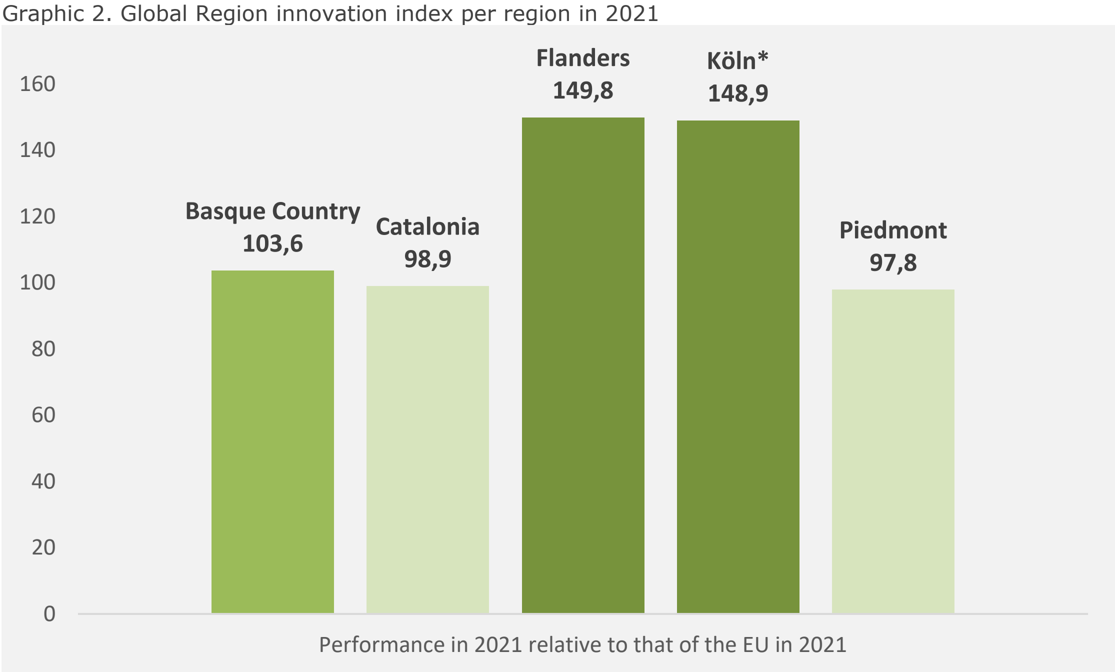
Source: Own preparation based on Eurostat data

2.2. Regional innovation scoreboard

The Regional Innovation Scoreboard provides a comparative assessment of performance of innovation systems across 240 regions of 22 EU Member States, Norway, Serbia, Switzerland, and the United Kingdom. Cyprus, Estonia, Latvia, Luxembourg, and Malta are included at the country level.

Europe's regions have been classified into regional Innovation Leaders (38 regions performing above 125% of the EU average), regional Strong Innovators (67 regions performing between 100% and 125% of the EU average), regional Moderate Innovators (68 regions performing between 70% and 100% of the EU average), and regional Emerging Innovators (67 regions performing below 70% of the EU average).

Graphic 2. Global Region innovation index per region in 2021



Source: Own preparation based on Regional Innovation Scoreboard data
*North Rhine-Westphalia appears divided in 5 subregions at European's Commission Regional Innovation Scoreboard that are related with city metropolitan areas as Köln, Düsseldorf, Münster, Detmold and Arnsberg. Köln has been the one chosen.

Regarding the global region innovation index per region, **Flanders, and Köln** (North Rhine-Westphalia) **are Innovation Leaders**, the **Basque Country appears as Strong Innovator region,** and **Catalonia and Piedmont are Moderate innovators**, but close to enter the Strong innovator category.

A more detailed look at each region's innovation profile is presented below.

Framework Conditions

		Basque Country	CAT	Flanders	Köln	Piedmont
Human resources	1.1.1 Percentage of population aged 25-34 years with tertiary education	**1,000**	**0,863**	**0,809**	**0,467**	**0,284**
	1.1.2 Lifelong learning. Population aged 25-64 enrolled in education or training.	**0,484**	**0,346**	**0,320**	**0,305**	**0,328**
Attractive research systems	1.2.1 International scientific co-publications per million inhabitants	**0,987**	**0,739**	**0,800**	**0,800**	**0,589**
	1.2.2 Scientific publications among the top-10% publications most cited internationally as % of total scientific publications in the country	**0,614**	**0,617**	**0,759**	**0,649**	**0,581**
	1.3.2 Individuals who have above basic overall digital skills	**0,640**	**0,666**	**0,603**	**0,707**	**0,317**
Average		**0,745**	**0,646**	**0,658**	**0,492**	**0,419**

Framework conditions indicators capture the main performance boosters for innovation and cover three dimensions of innovation: Human Resources, Attractive Research systems and digitalisation.

Considering the innovation framework conditions per regions analysing human resources and attractive research systems, the regional average allocates the **Basque Country** in the leading position (0,745) followed by Flanders (0,658), Catalonia (0,646), Köln in North Rhine-Westphalia (0,492) and Piedmont (0,419).

Investments

		Basque Country	Catalonia	Flanders	Köln	Piedmont
2.1. Finance and Support	2.1.1 Public expenditure on R&D as % of GDP	**0,318**	**0,394**	**0,573**	**1,000**	**0,214**
2.2 Firm Investments	2.2.1 Private R&D expenditure as % of GDP	**0,549**	**0,337**	**0,718**	**0,477**	**0,646**
	2.2.2 Non-R&D innovation expenditure as % of total turnover	**0,280**	**0,337**	**0,477**	**0,380**	**0,579**
	2.2.3. Innovation expenditures per person employed in innovation-active enterprises	**0,688**	**0,525**	**0,986**	**0,634**	**0,632**
2.3. Use of information technologies	2.3.1. Employed ICT specialists	**0,427**	**0,464**	**0,674**	**0,680**	**0,467**
Average		**0,452**	**0,411**	**0,685**	**0,634**	**0,507**

Investments indicators capture public and private investment in research and innovation and cover three dimensions: financing and support and firm investments and use of information technologies.

Regional investments in innovation taking in consideration finance and support, firm investments, and use of information technologies changes the rating in comparison with innovation framework conditions. The leading region is **Flanders** (0.685) followed by Köln in North Rhine-Westphalia (0,634), Piedmont (0,507), Basque Country (0,452) and Catalonia (0,411).

Innovation activities

		Basque Country	Catalonia	Flanders	Köln	Piedmont
3.1. Innovation activities	3.1.1 Product innovators	**0,408**	**0,361**	**0,600**	**0,998**	**0,766**
	3.1.2 Business process innovators	**0,367**	**0,325**	**1,000**	**0,789**	**0,925**
3.2 Links	3.2.1 Innovative SMEs that collaborate with others as % of SMEs	**0,640**	**0,284**	**1,000**	**0,841**	**0,720**
	3.2.2 Public-private co-publications per million inhabitants	**0,715**	**0,652**	**0,714**	**0,826**	**0,568**
3.3 Intellectual assets	3.3.1 PCT patent applications per trillion GDP (in euros PPP)	**0,399**	**0,507**	**0,637**	**0,788**	**0,549**
	3.3.2 EU trademarks per trillion GDP (in euros PPP)	**0,424**	**0,779**	**0,452**	**0,535**	**0,430**
	3.3.3 Design applications	**0,358**	**0,561**	**0,539**	**0,526**	**0,563**
Average		**0,473**	**0,495**	**0,706**	**0,757**	**0,645**

Innovation activities indicators capture the innovation efforts at the company level, covering three dimensions: innovators, links, and intellectual activities. The regional average for these indicators allocates **Köln in North Rhine-Westphalia** (0,757) and Flanders (0,706) in the leading positions followed by Piedmont (0,645), Catalonia (0,495) and the Basque Country (0,473).

Impacts

		Basque Country	Catalonia	Flanders	Köln	Piedmont
4.1. Employment impacts	4.1.1 Employment in knowledge-intensive activities as % of total employment	**0,706**	**0,681**	**0,626**	**0,691**	**0,907**
	4.1.2 Employment in innovative enterprises	**0,473**	**0,359**	**0,909**	**0,942**	**0,800**

4.2. Sales impacts	4.2.1 Sales new-to-market and new-to-firm innovations	**0,722**	**0,626**	**0,763**	**0,627**	**0,808**
4.3. Enviromental sustainability	4.3.1. Air emissions in fine particulates (PM2.5) in Industry	**0,604**	**0,555**	**0,501**	**0,590**	**0,233**
Average		**0,626**	**0,555**	**0,699**	**0,712**	**0,687**

These indicators illustrate how innovation translates into benefits for the economy as a whole: impacts on employment and effects on sales and environmental sustainability. **Köln in North Rhine-Westphalia** is also in the leading position (0,712) followed by Flanders (0,699). Piedmont (0,687), Basque Country (0,626) and Catalonia (0,555) complete the rating.

3. Key concepts on innovation in CCSIs

When conceptualizing and analysing innovation in CCSIs, five relevant dimensions are found. These key concepts are specifically meaningful in studying CCSIs.

Relevant dimensions to approach innovation in CCSIs				
1 Culture and Creative Industries' perimeter	**2** Strategic approach	**3** Innovation tools	**4** Public-private partnership framework	**5** Innovation type

Culture and Creative Sectors and Industries' perimeter

Due to CCSIs' strategic condition, it is widely accepted as one of the most dynamic sectors from an economic point of view. The **debate remains open regarding the definition and delimitation** of the conceptual framework for its study and analysis. Functional visions exist alongside other more cultural in themselves.

However, the reference organisms in the analysis are drawing up the coordinates marking the perimeter of the CCSIs. According to ESSnet-Culture (European Statistical System Network on Culture), the common characteristics of cultural and creative activities are those based on symbolic values and/or artistic expressions. They include both activities aimed at the market or not, for-profit, or not-for-profit, and those carried out by any type of producer agent and structure.

The perimeter of the CCSIs can be either more or less widely inclusive, and everything suggests that the sectors and subsectors which make them up will continue to expand in tandem with the transformations in the economic, social and cultural realities.

In any case, beyond the purely speculative debate and theoretical models, **the delimitation of the perimeter depends on the policies that are applied for its development** (more or less expansive) **and the specific characteristics and interests of the contexts** where they are located.

Strategic approach

The institutional support framework for CCSIs can be analysed from three axis:

- **Cultural-creative axis**: if the emphasis is on the cultural-symbolic, starting from cultural policies and extending the radius of action towards the new creative territories, the institutional structure of support starts from the areas or departments of culture. Conversely, if policies respond to more instrumental objectives, such as economic development, they are usually driven by economic or industrial departments or areas. It may be the case that there are combined supportive policies.
- **Specific-general policy axis**: depending on whether CCSIs are targeted by specific and limited support policies and strategies, or within a broader framework of support as the other sectors. From this axis of analysis and, within the framework of the agendas of support for innovation, it may be the case that they are considered territories of opportunity, even in generic support programs.
- **Governance**: even in the regional field, another of the axes of analysis refers to the multilevel governance model, where administrations of different territorial scale (local, regional, state...) coexist for the coordinated development of policies to support the CCSIs.

Intervention tools

The support forms for the CCSIs comprise a wide spectrum: from **economic-financial support** measures, which can be direct aid (scholarships, grants, cheques...) or indirect aid such as financing tools (venture capital, guarantees, tax incentives...), to training programs, **support for entrepreneurship**, the **growth** of companies, the **improvement of competitiveness, support for innovation**, **internationalization,** and **access to new markets**.

It should be noted that instruments to support the cultural sector have traditionally been more linked to subsidies and aid. It must be considered that the weight of public intervention in the cultural sectors is relevant not only because of the volume of the public budget allocated to them. It is also relevant because the public administrations are key agents in the structure of the sector (for example, the museums, theatres, libraries, etc.). These are sectors where the infrastructure is fundamentally public and where the main tools for direct support to the sector are subsidies.

On the other hand, economic development support strategies, which are intended for all sectors, tend to combine a wider spectrum of modalities. These types of indirect measures are designed to support the competitiveness of the sector, fostering a favourable breeding ground for business creation and innovation, which requires a broader and more sophisticated range of tools than strictly monetary aid.

Public-private partnership framework

"**Innovation ecosystem**" is the term used to describe the several players, stakeholders, and community members that are critical for innovation. The **triple helix model** of innovation, based on trilateral networks and hybrid organisations (government-universities-industry) **proposes an ecosystem open to innovation that has been developed with a quadruple helix** (civil society), closely related with specific characteristics of the CCSIs. The innovation model of the fivefold helix, currently in a validation phase, incorporating environment or habitat, will provide a broader and more complete vision of the model. This fivefold helix referring to the socio-ecological transition of society and the economy in the twenty-first century, poses new challenges in the future considering the natural environments of society and the economy as engines of innovation.

Partnerships between the government, the business sector and a wide variety of institutions have high potential to find innovative solutions for the CCSIs. An innovation ecosystem includes universities, government, corporations, start-up accelerators, venture capitalists, private investors, foundations, entrepreneurs, mentors, and the media. Public-private partnership framework is built within this ecosystem to transform new ideas into reality through the access, the research, and the financial investment.

Public-private partnerships are based on sharing risks and finances and can be divided into short-term collaborations for specific projects and long-term partnerships where risks and tasks are shared. Mutual beneficial and equitable partnerships require the careful development of institutional, policy and administrative enabling environments. When these partnerships have success, they offer opportunities to develop capacities, transfer knowledge and excellence, and promote entrepreneurship.

Innovation's type

The CCSIs are characterised by their **intrinsic capacity to innovate**, given that they are fields of creation, reinvention, and constant renewal. This dynamic ought to facilitate a commitment to innovation in its products, in its processes, in its organisation and in the management of resources.

There are no specific conceptual models to characterize innovation in CCSIs so far. In fact, the development of the *Contrast* project, in which this pilot study is framed, is contributing to design a theoretical framework of reference that responds to the characteristics of innovation in the cultural and creative sectors. Based on concepts and elements of innovation in all sectors such as those developed in the Oslo Manual, and the specific features of the CCSIs, it proposes a new conceptual framework that helps to characterize, analyze, and understand the nature and meaning of innovation in these sectors.

Work is being done on a three-dimensional model, structured around the intrinsic value derived from the cognitive, aesthetic, and patrimonial elements that distinguish these sectors; their instrumental value as a result of the economic, social and environmental impact they generate and which link them to existing models; and the shared social value implied by its collaborative, ethical and governance dimensions. It is a process under construction, whose design is still incipient, which will have to be developed, debated, agreed, and tested in the future.

In the absence of its own well-established model, this Pilot Study has been used, through the survey, to:

1) Contrast the best-established concepts through closed questions.
2) Explore specificities and new concepts of innovation in the CCSIs through open questions, which have been analyzed and coded to facilitate the identification of categories.

In relation to the best-established concepts, according to the Oslo Manual, **an innovation is a product or process (or the combination of both**), **new or improved**, that differs significantly from (previous) products or processes of the unit **that has been made available to potential users** (product) **or put in use by the unit** (process). The basic definitions of a product and the innovation of processes are as follows:

— A **product** innovation is a **new or improved good or service** which differs significantly from previous goods and services of the business, and which has been put on the market.

— A **process** innovation is a new or improved process for one or more business function that differs significantly from the previous processes of the firm and that the firm has put into use. Process innovations refer to six different functions of the business, as identified in business management literature.

Another well-established innovation distinction differentiates between technological and social innovation:

— **Technological innovation** is based on the results of new technological developments or new combinations of existing technologies.

— **Social innovation** refers to the design and implementation of new solutions that imply conceptual, process, product, or organisational change, which ultimately aim to improve the welfare and wellbeing of individuals and communities.

Finally, there is a common differentiation based on internal and external innovation:

— **Internal innovation:** within the same company or organisation.

— **External innovation:** application and exploitation of innovation practices by third parties (whether they are other companies, institutions or the community). It is directly linked to concepts such as open innovation orcollaborative innovation.

Furthermore, another way to classify innovation is based on the impact generated by the project:

— **Economic impact**: understood as the project's capacity to generate profits such as the increase in invoicing and the profitability of the company; the impact on employment; and the economic return obtained through the project's intellectual property.

— **Social impact**: understood to mean the set of factors contributing to increase the project's social return. Among them, it is worth highlighting those affecting social cohesion and inclusion; in education and the autonomous development of people; in governance and participation and in sustainable employment.

- **Environmental impact**: understood as the project's contribution to improve the efficient use of resources and the prevention of pollution and its surroundings improvements.

In addition to the previous approaches, the open questions results made to the organizations themselves will be presented along the analysis. Thus, their reasons to develop innovation, the needs they are seeking to cover and their innovation methodology will be analysed and codified.

These different types of innovation are also different angles for analysing the innovation, so they can come together in the same project or organization.

4. Cross-cutting analysis

Key concepts presented above contribute to a structured study of the CCSIs in a meaningful way. In this section, these key concepts are combined with the analysis dimensions from the region's examples and existing practices contributing to do an innovation approach for each of the regions of the study.

4.1. Culture and Creative Sectors and Industries' perimeter

By comparing the **subsectors that make up the cultural and creative industries** in each region, we can perceive **differences in what is included or not and different taxonomies to classify the sectors.**

CCSIs perimeters and taxonomies across the regions has its differences and confluences (see table 1 and graphic 1):

- Only in Flanders and the Basque Country fashion appears as a sector itself of the CCSIs. In the other regions, it is included in other sectors as design or visual arts.
- Video games it is not considered a sector itself in Catalonia since it is included within the audio-visual and multimedia.
- Design it does conform a subsector in all the regions except in Catalonia where it is included within the visual arts subsector.
- In North Rhine-Westphalia, cultural heritage does not appear as a subsector itself as it is considered a lateral sector spanning over architecture, music, and art.
- The music sector does not appear in Catalonia's taxonomy as a sector as it is included in the performing arts sector.
- Gastronomy it is only considered a subsector of the CCSIs in the Basque Country together with Craftmanship and Language Industries.
- Likewise, Broadcasting industry it is just considered a sector in North Rhine-Westphalia.
- The books and press sector it is presented aggregate or desegregate depending on the region. Catalonia considers books and press as a sector. North Rhine-Westphalia is desegregating the books and the press defining 2 separate sectors. Flanders stresses the format of the product within the sector "Printed and digital media and visual arts" apart from Communication.

Likewise, the Basque Country differentiates the sector Publishing and printed media from the sector Digital Media by the format.

Table 1. CCSIs sectors per region (using region's own labels for each sector)

<table>
<tr><th>Catalonia
(9 sectors)</th><th>Flanders
(12 sectors)</th><th>NRW
(11 sectors)</th><th>Piedmont
(9 sectors)</th><th>Basque Country
(15 sectors)</th></tr>
<tr><td>Cultural heritage, archives, and libraries</td><td>Cultural heritage</td><td>Cultural heritage*</td><td>Cultural heritage</td><td>Cultural heritage</td></tr>
<tr><td>Performing arts (Theatre and music)</td><td>Performing Arts</td><td>Performing Arts</td><td rowspan="2">Performing arts and visual arts</td><td>Performing arts</td></tr>
<tr><td>Visual arts (design included)</td><td rowspan="2">Printed and digital media and visual arts</td><td>Art market</td><td>Visual arts</td></tr>
<tr><td>Books and press</td><td>Book market</td><td>Publishing</td><td>Publishing and printed media</td></tr>
<tr><td></td><td>Music</td><td>Music industry</td><td>Recording</td><td>Music</td></tr>
<tr><td>Audiovisual and multimedia (videogames included)</td><td>Audiovisual industry</td><td>Film industry</td><td>Audiovisual</td><td>Audiovisual</td></tr>
<tr><td></td><td>New media</td><td>Broadcasting industry</td><td></td><td></td></tr>
<tr><td></td><td>Communication</td><td>Press market</td><td rowspan="2">Communication (including advertising, press offices)</td><td></td></tr>
<tr><td>Advertising</td><td>PR & Advertising</td><td>Advertising</td><td>Advertising and marketing</td></tr>
<tr><td>Architecture</td><td>Architecture</td><td>Architecture</td><td>Architecture</td><td>Architecture</td></tr>
<tr><td></td><td rowspan="2">Games</td><td rowspan="2">Software and games industry</td><td rowspan="2">Videogames and software</td><td>Videogames</td></tr>
<tr><td></td><td>Digital contents</td></tr>
<tr><td></td><td>Design</td><td rowspan="2">Design industry (including fashion)</td><td>Design</td><td>Design</td></tr>
<tr><td></td><td>Fashion</td><td></td><td>Fashion</td></tr>
<tr><td>Other services related to culture (media representation services, newspaper edition)</td><td></td><td></td><td></td><td>Language industries</td></tr>
<tr><td>Industrial activities related to culture (graphic arts, impression, reproduction of recorded media)</td><td></td><td></td><td></td><td>Craftmanship</td></tr>
<tr><td></td><td></td><td></td><td></td><td>Gastronomy</td></tr>
</table>

*Cultural heritage is considered a lateral sector spanning over architecture, music and art
Source: Own preparation based on region's provided information

On one hand, as we can see in table 1, there are basically **three important different ways** in which perimeters can be expanded:

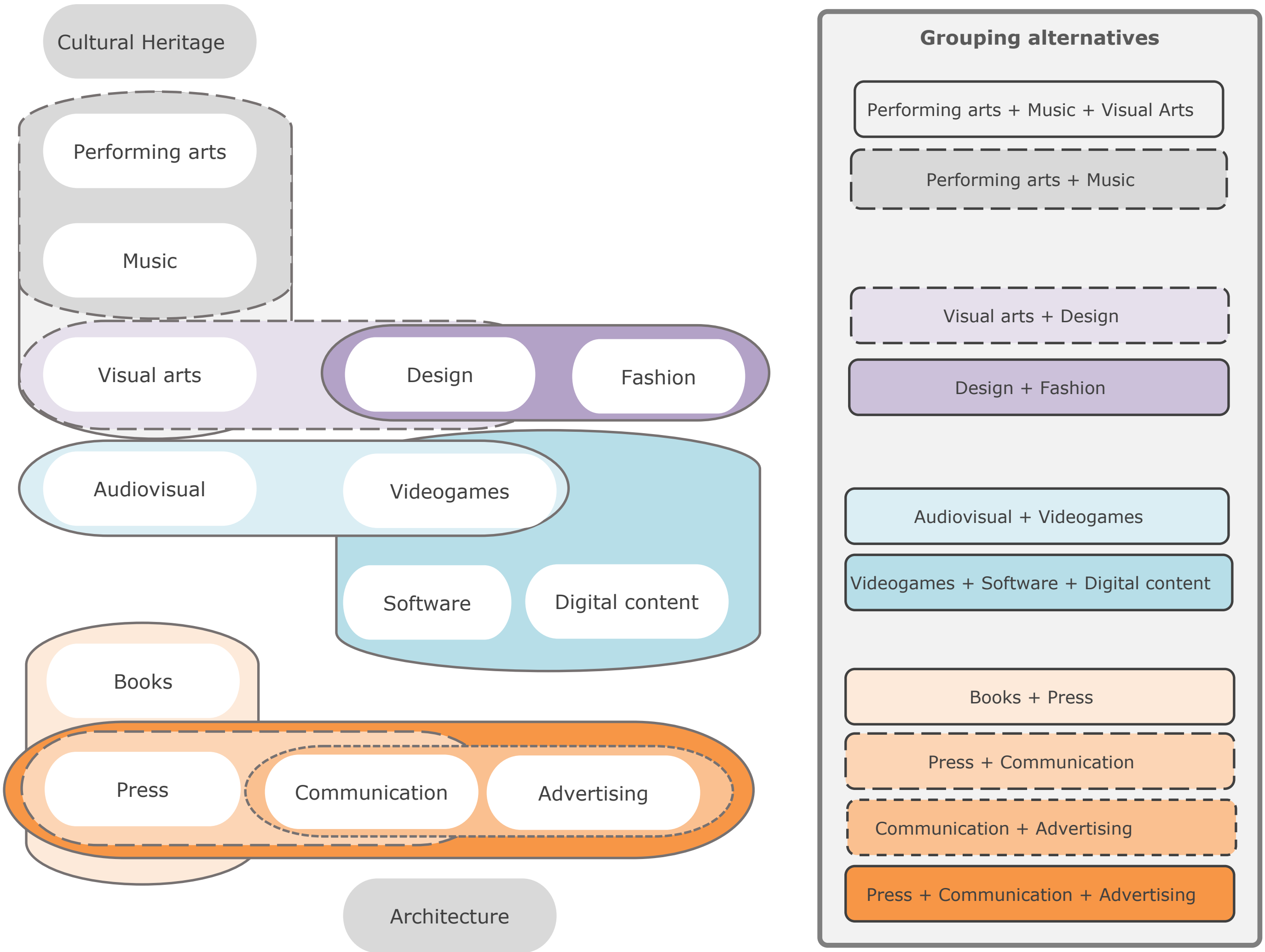
A) The inclusion of **software, digital content and/or new media**.

B) The inclusion of **fashion**.

C) The inclusion of **specific sectors** (graphic arts and impression, language industry, gastronomy, craftsmanship…).

On the other hand (graphic 1), **differences in taxonomies are related to how some activities with blurred boundaries are grouped**. These diffuse groups affect activities like design, visual arts, videogames, press and books.

Graphic 1. Illustration of the different ways of grouping CCSIs sectors



Source: Own preparation based on region's provided information

Moreover, in some cases there are specifications about "core activities" and other complementary or auxiliary activities and in other cases they differentiate between cultural and creative sectors. These facts shows that **there is not a clear common pattern for all perimeters and taxonomies** and that the classification seems to depend on the specific interests or realities of each region.

Finally, it is relevant to attend to the selection of good practices made by the regional coordinators, which indirectly reflects the specific interests in each case. As can be seen in Annex table 2, in Catalonia and Piemonte the traditionally cultural sectors focus more attention. By contrast, North Rhine-Westphalia and Flanders highlight more creative sectors. In the Basque Country, on the other hand, there is a great transversality in the equitable consideration of all sectors.

Cultural orientation	Transversal orientation	Creative orientation
• Catalonia • Piedmont	• Basque Country	• North Rhine-Westphalia • Flanders

4.2. Strategic approach

CCSIs policies can adopt an integrated approach that goes beyond the traditional span of culture and embraces other policy areas including economic affairs, education, tourism, competition, innovation, regional development, social and urban planning.

In some of the regions participating in the pilot study, as Catalonia or Piedmont, **culture is the main policy area supporting CCSIs** through specific bodies that provide CCSIs with tools for financing, as well as services for internationalization, business training and audience development as the Catalan Institute for Cultural Companies (ICEC). Likewise, the Regional Directorate for Cultural and Landscape Heritage of Piedmont dependent on the Italian Ministry of Culture fulfils different functions and roles in relation to the promotion, support, and valorisation of contemporary Italian creativity.

In some **other regions with a more integrated approach**, as North Rhine-Westphalia, Flanders or the Basque Country, **culture shares with other policy areas the support to CCSIs**. It must be considered that there could be an evolution from the initiatives of the area of culture to the confluence with other areas, strengthening development of innovation and CCSIs.

Culture policy area main role	Confluence of diverse policy areas
• Catalonia • Piedmont	• North Rhine-Westphalia • Flanders • Basque Country

In North Rhine-Westphalia, for instance, the main support is shared between the Federal Ministry for Economic Affairs and Climate Protection and the Minister of State for Culture and Media that launched the Cultural and Creative Industries Initiative to increase the industry's competitiveness. The Federal Foreign Office, the Federal Ministry of Justice, the Federal Ministry of Finance, the Federal Ministry of Labour and Social Affairs and the Federal Ministry of Education and Research are also involved. This initiative is carried out by the Centre of Excellence for the Cultural and Creative Industries which its main task is to identify opportunities for cooperation and to make synergy effects in the interaction of the Cultural and Creative Industries with other sectors and areas. Nevertheless, on a state level, it is the Ministry of Economic Affairs, Innovation, Digitalization and Energy (MWIDE) the one supporting Creative Industries through the specialized institution **CREATIVE.NRW** to work as a competence centre and consultancy for freelancers, companies, institutions, and municipalities.

Creative and Cultural Industries in Flanders can also apply for support schemes in the policy field of Economy, Science, and Innovation through the Flemish Agency of Innovation & Entrepreneurship. This agency offers through a specialized agency as **Flanders District of Creativity** a point of contact for entrepreneurs in the CCSIs, offering expertise, coaching, promotion, and network development.

In the Basque Country, it is the Basque Department of Culture and Language Policy the main governmental actor steering the support to CCSIs with a working area called Cultural and Creative Industries in Euskadi. However, **Creative Euskadi**, the new interdepartmental program that has been launched to develop the potential of the CCSIs addresses the field of culture and creativity through innovation. It is steered by the Department of Culture and Language Policy, Department of Economic Development and Infrastructures, and Presidency Department.

Moreover, support measures do not need to be specific to CCSIs, they can also stem from the availability and promotion of traditional support to Small and medium-sized enterprises (SMEs) in general or other broad strategies from business sphere supporting innovation, competitiveness, or entrepreneurship. We can detect areas, agencies or strategies among all the regions:

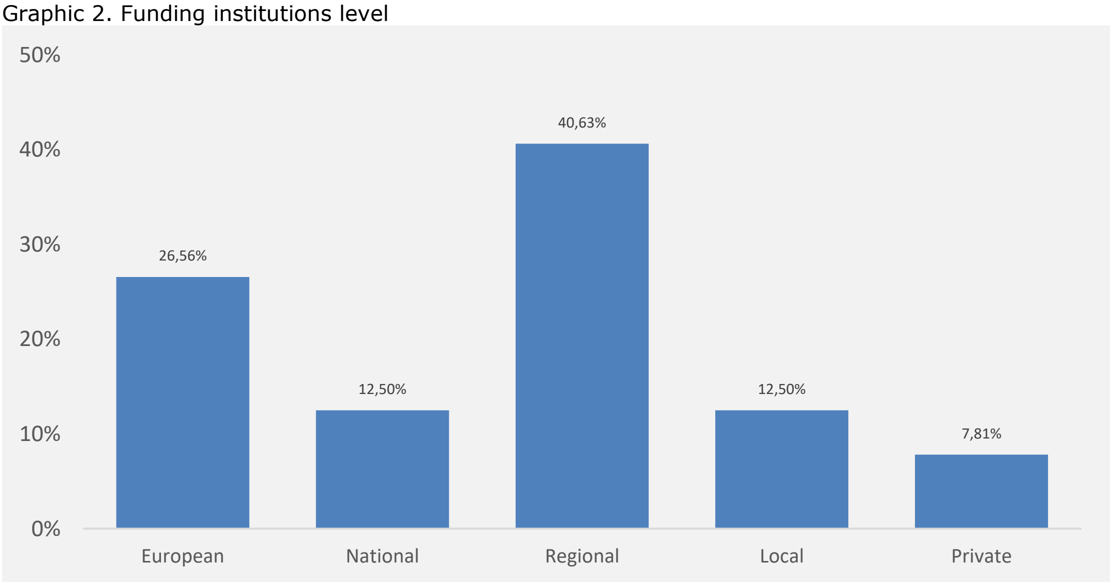
— **Enterprise and Competitiveness** that advises companies from different sectors to boost their competitiveness in terms of funding, start-ups, innovation, internationalization, clusters, and foreign investment as the Catalan Agency for business competitiveness (ACCIÓ in Catalonia). Likewise, SPRI Group is also the entity of the Economic Development, Sustainability and Environment Department of the Basque Government for promoting the Basque industry offering a wide range of programmes to improve the competitiveness of the Basque industry (including CCSIs).
— **Foreign Affairs** offering schemes for international entrepreneurial activities, including the CCSIs as Flanders Investment and Trade (FIT).
— **Chambers of Commerce**, as in Piedmont, that have added the support to the CCSIs to their territorial development skills.
— **Region development agencies** as Business Metropole Ruhr in North Rhine-Westphalia with their project Creative Innovation Ruhr. The project

focuses on the nationwide recruitment of (potential) founders from the culture and creative industries, the matching of these with SMEs and the initiation of new cross-sector cooperation to promote innovation and the digitization competence of the regional economy in the Ruhr Metropolis.

— **Provincial Councils** as they do in the Basque Country supporting entrepreneurship and innovation in several sectors through the Provincial Department of Economic and Territorial Development's agents.
— **City Councils agencies** focused on the start, development, and acceleration of the CCSIs in their cities as Barcelona City Council's economic development agency Barcelona Activa. Another example is the Bilbao Bizkaia Design Council Initiative launched by the Bilbao City Council and Bizkaia Provincial Council to promote creative industries as a factor of economic development and contribute to their international projection.
— Even though it is not a public body, **banking foundations** become relevant in Piedmont as the region can rely on their additional resources. There, the investment of Banking foundations in culture is bigger than the regional budget for culture and support in CCSIs through diverse calls for funding.

Finally, as we can see, many governance levels work on supporting CCSIs. Agents that have participated in the study mainly refers to the importance of regional (40,6%) and European (26,6%) funding of their initiatives, followed by national (12,5%), local (12,5%) and, finally, private funding (7,81%, basically in Piedmont).

Graphic 2. Funding institutions level



Source: own preparation based on questionnaire information

- **Regional funding** is the administrative level with the greatest weight in the funds received by the agents participating in the study.

  Looking at Annex table 10, this is specifically relevant in the cases of Flanders, Catalonia, and the Basque Country. This may be reflecting the effect of active strategies for the valorization and competitiveness of regional territories with national aspirations.
- **European funding** represents a relevant rate among the organizations that have taken the survey in all the regions. Flanders organizations taking the survey received 37,50% on average via European funding followed by Piedmont, North Rhine-Westphalia, Catalonia, and the Basque Country. Some of the funded programs are: Interreg, Horizon Europe, Creative Europe and Creative Media, Erasmus plus, European Regional Development Fund, European Social Fund.

4.3. Intervention tools: Support policies and public programs

Economic, non-economic and hybrid measures are the main support programs among the regions participating in the pilot study to support innovation across CCSIs.

Table 2. Description of the detected intervention tools

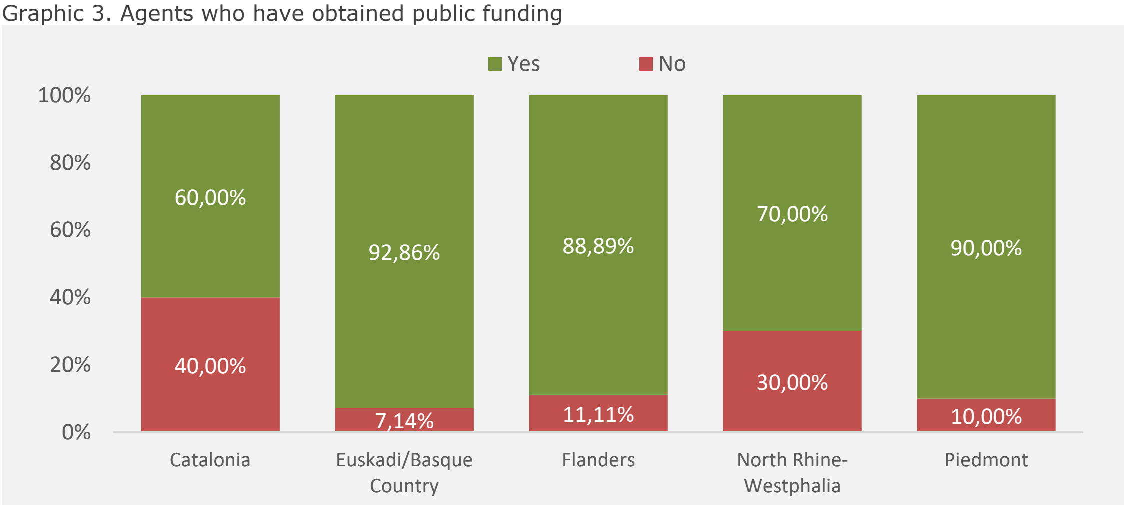
Economic measures	Non-economic measures
• Funding targeted to CCSIs ○ Lines of grants to support the implementation of digital and technological. ○ A wide range of financing solutions for cultural and creative entrepreneurs. ○ Measures to boost cross-sectoral innovation and collaboration between CCSIs and other industries. ○ Set of funding measures to stimulate the innovation potentials to deal with the direct and indirect consequences of the Corona crisis. ○ Funding targeted to specific cultural and creative industries. ○ Grants to support CCSIs sectors along the value chain.	• Training and advice opportunities targeted to CCSIs ○ Support and training services to new companies and start-ups. ○ Services offered targeted to improve CCSIs competitiveness and internationalization strategies. ○ Mentoring programmes.
• Awards targeted to CCSIs	• Incubators and Accelerators
• Entrepreneurships and innovation funding (not specific to CCSIs) ○ Start-up funding. ○ Supporting companies and research centres to realize their research. ○ Subsidies for entrepreneurs, training opportunities, advice, investments ○ Financial solutions: Tailor-made, low-interest promotional loans and equity. ○ Supporting the foundation of start-ups within universities.	• Entrepreneurship and innovation training and advice opportunities (not specific to CCSIs)
• Entrepreneurship Awards (not specific to CCSIs)	
Hybrid measures as a combination of economic and non-economic tools	

Source: own preparation based on region's provided information

The data obtained in the survey allow to obtain an overview of the impact of economic and non-economic measures.

In relation to economic measures, analyzing the answers about the participant organizations awareness about public funding for innovative projects in the regions, we observe that **81,1% of the organizations have obtained public funding to conduct innovative projects.**

Graphic 3. Agents who have obtained public funding



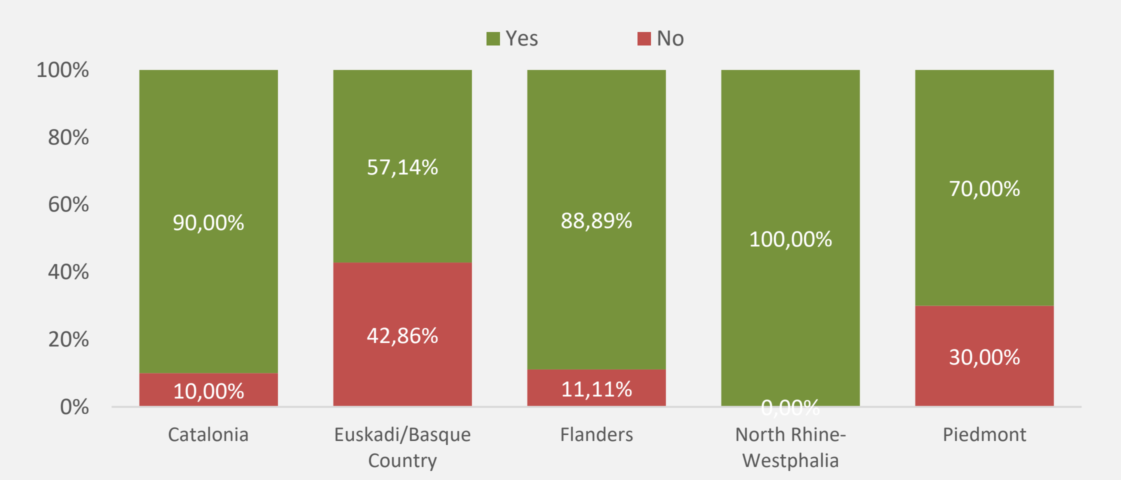
Source: own preparation based on questionnaire information

Nevertheless, it must be noted that, in some regions as Catalonia and North Rhine-Westphalia, between three and four out of ten organizations say they have never obtained public funding for innovative projects. This doesn't mean that innovation is not occurring, just that **innovation can occur through non-economic measures**. In fact, non-economic measures are more numerous than economic measures across the regions, except for North Rhine-Westphalia.

Regarding the non-economic measures, analysing the question about the existence of creative incubators to encourage innovation and entrepreneurship on their respective regions, we can observe that the **79% of the organizations that took the survey are aware of creative incubators in their regions** in opposition to the 21% that are not aware. Again, regional scenarios seem to be heterogeneous:

- The participant organizations of North Rhine-Westphalia are all aware of the existence of creative incubators and facilities to encourage innovation and entrepreneurship, followed by Catalan and Flemish organizations.
- Awareness rate among participant organizations drops to 70% in Piedmont and 57% in the Basque Country.

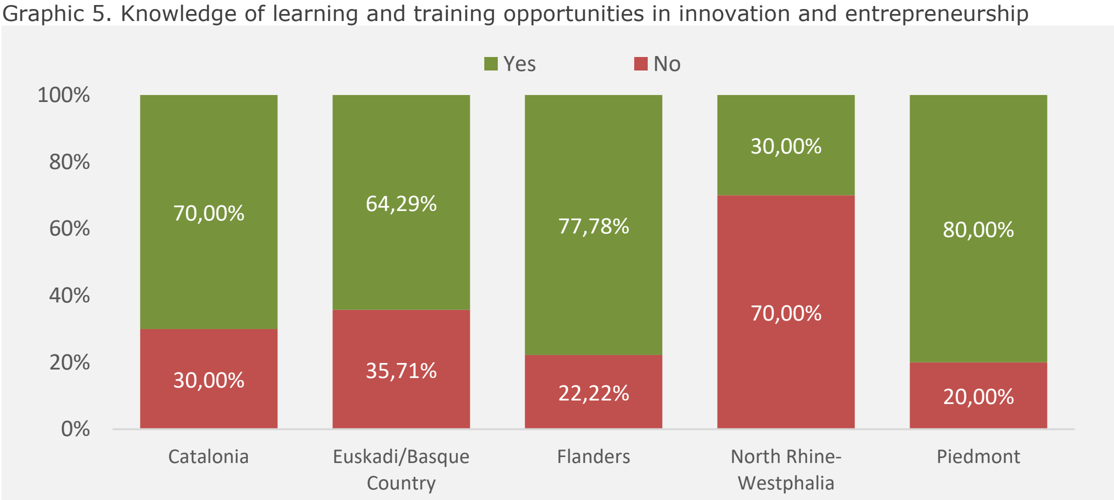
Graphic 4. Knowledge of platforms or facilities that act as creative incubators



Source: own preparation based on questionnaire information

Furthermore, analysing the participant organizations' awareness rate of **learning and training opportunities in innovation** and entrepreneurship in their respective regions, the rate drops to **64% for the organizations that are aware** and 36% for those organizations who are not (see Graphic 5). In that case, North Rhine-Westphalia brings down the average. Despite that fact, the knowledge is again extensive but not absolute.

Graphic 5. Knowledge of learning and training opportunities in innovation and entrepreneurship



Source: own preparation based on questionnaire information

Finally, it is also interesting to note that EU funds and programmes are named by several organizations across the regions and that measures targeted to CCSIs (economic, non-economic) are mentioned by all region's organizations in the survey: **there is an information deficit in some cases, but a general knowledge can be stood.**

Examples of economic, non-economic and hybrid measures identified in regional contexts are then synthesized and provided.

Economic measures

The economic measures are aimed at promoting the sector from different angles (specifically oriented to the cultural and creative sectors or open to other sectors), different aspects (digitalization, entrepreneurship, Covid-19 impact ...) and tools (credit, grans, tax shelter ...).

Funding targeted to CCSIs

1. **Lines of grants** to support the **implementation of digital and technological projects.** To ensure modernization and innovation and ensure the incorporation and transfer of digital technologies among Cultural and Creative Industries. Measures like those of the Catalan Institute for Cultural Companies and Spanish Ministry of Culture and Sports or the KSITek grants targeted for associations of the Cultural and Creative Industries sector of the Basque Country. These measures often imply collaboration with a technological agent expert in digital transformation with whom to carry out the project.

2. **A wide range of financing solutions for cultural and creative entrepreneurs**. For instance, the set of financial instruments from the Flemish Department of Culture, Youth and Media that work in addition to subsidies to obtain additional resources more easily from the market and to arrive at an ideal financial mix like Culture credit with a very low interest or a tax shelter scheme for start-ups.

   Other interesting measures are refundable contributions and participatory loans as those from Catalan Institute for Cultural Enterprises by the Catalan Department of Culture. The refundable contributions are an innovative commitment that consists of the contribution of financial aid, in the form of co-financing, that allow the company to have liquidity to start a cultural project and that are facilitated in the double modality of subsidy plus loan. The return of the grant is made within a period adjusted to the financial needs of the project and considering the success or failure of the proposal. The participatory loans are targeted to cultural start-ups with a digital business model that aims to offer them support in the early stages of their business projects.

3. **Measures to boost cross-sectoral innovation and collaboration** between CCSIs and other industries trough specific programs, like Innovative Partner Projects from the Flemish Ministry of Culture that allows various cultural organizations to enter in collaboration with organizations from other sectors, KSI Berritzaile grants by the Basque Department of Culture and Language Policy or Ekonomia Sortzailea grants Gipuzkoa Provincial Council in the Basque Country to promote the transformative value of the creative economy.

4. **Set of funding measures to stimulate the innovation potentials to deal with the direct and indirect consequences of the Corona crisis** in the field of culture. For instance, scholarships for artists offered by the Ministry of Culture and Science of the State of North Rhine-Westphalia, grants for rethink business model (Egotiku 2020) by the Basque Department of Culture and Language policy or general plans (grants, training, funding…) to promote entrepreneurship among the CCSIs in the context of post-pandemic economic recovery in Catalonia.

5. **Funding targeted to specific cultural and creative industries** (music, film, books, design, digital content, etc).

6. **Grants to support CCSIs sectors along the value chain.**

Entrepreneurships and innovation funding (not specific to CCSIs)

1. **Start-up funding**. For example, the one consisting in a grant of 1.000€ per month for a year offered by the Ministry for Economic Affairs, Innovation, Digitization and Energy of North Rhin-Westphalia**.**

2. **Supporting companies and research centres** to realize their research and development projects by providing funding. For instance, funding by the Flemish Agency of Innovation and Entrepreneurship (VLAIO) or R+D+I support programme Hazitek 2022 by the Basque Business Development Agency, that has been designed for promoting projects focused on R+D+I

both in the SMEs, as well as in the large companies and Basque companies' associations.

3. **Subsidies for entrepreneurs** to support them in training opportunities, advice, investments and research and development.

4. **Financial solutions**: Tailor-made, low-interest promotional loans and equity financing for founders and entrepreneurs like those offered by **NRW BANK** and helps them with comprehensive, provider-independent promotional advice to prepare for the financing discussion with their house bank.

5. Supporting the **foundation of start-ups within universities**. For example, in North Rhine-Westphalia, twice a year, founders can apply for financial support from the state and European Regional Development Fund (ERDF).

Entrepreneurship Awards (not specific to CCSIs)

For example, the Ministry for Economic Affairs, Innovation, Digitization and Energy of the State of North Rhine-Westphalia promotes the **FOUNDER AWARD NRW**: one of the most highly endowed competitions in Germany for young companies, company successors and freelancers from the areas of trade, industry, and services (60.000€).

Non-economic measures

These measures are focused in offering training opportunities, mentorship, consultancy, and space facilities.

Training and advice opportunities targeted to CCSIs

1. **Support and training services to new companies and start-ups** as **Creamedia,** an initiative to support start-ups in the media sector by Barcelona's Local Development Agency, the Business Development Service of the ICEC and Catalunya Cultura Foundation offering support and advice of experts and 5 months' workspace.

2. **Services offered targeted to improve CCSIs competitiveness and internationalization strategies**. Through programs based on training opportunities, consulting services, guidance, network developing and mentorships

as Basque District of Culture and Creativity and KSIAtea in the Basque Country, Creative.NRW in North Rhine-Westphalia or Flanders District of Creativity.

- There are also **specific mentoring programs** for certain sectors or objectives, as in the case of media and game industry:
  - ***Sheroes* Mentoring programme** by the Media Founders Centre offers a 6-month program to specifically promote female founders in the media and games industry in North Rhine-Westphalia. A seminar program, coaching, mentoring and intensive networking.
  - **Mentor sessions for videogames companies.** Individual advisory sessions by experts in subjects such as law, financing, strategy, marketing, production, publication, distribution, monetization, and human resources. Program promoted by the ICEC through Catalan Arts and the Area of Business Development, and managed and executed by GameBCN, a videogame firm.

Incubators and Accelerators

Incubators and accelerators are the facilitators nodes for innovation and there is a coexistence between public and private initiatives, becoming strategic partners in some cases. There are open to all kind of fields within innovative start-ups providing them with affordable office space, administrative services and even development tools.

- **Business incubators and accelerators** are open to all Cultural and Creative industries but those focused on Information and Communications technology, digital technology, or game technology stand out.
- Among the **private initiatives**, there are multiple examples among the regions, each with a specific focus, and **generally very oriented to creative and technological fields.**
- **There are also some public initiatives in all the regions.** In these cases, the programs also include services such as mentoring, accompaniment to entrepreneurship, spaces for collaborations...

  It highlights the existence of a network of incubators and accelerators in the Basque Country, with headquarters in the three provinces, under the same mission and another network in North Rhine-Westphalia of start-ups in universities.

- **Universities** also appear as spaces for the gestation of projects and start-ups although, again, with a clear focus on the creative and the technological.
- From an action more linked to the **social dimension** there are also incubators and accelerators, despite being **less common**. For example, the Sociale Innovatie Fabrik in Flanders, InnoBadora in Barcelona or the SocialFare in the foothills.

Entrepreneurship and innovation training and advice opportunities (not specific to CCSIs)

- Supporting companies and research centres **to realize their research** and development projects as the Flemish Agency of Innovation and Entrepreneurship (VLAIO) does by providing advice, and a network of potential partners in Flanders and abroad.
- **Schemes for international entrepreneurial activities** as Flanders Investment and Trade (FIT) offers belonging to foreign affairs policy.
- **Specific advice and support for start-ups:**
    - NRW Economy Advisory Program offers where funding is provided for the **development, testing, and implementation** of the start-up concept before it is implemented.
    - The programme in North Rhine-Westphalia Scale-up NRW helps the participating start-ups to **reach the scaling phase** with the help of individually tailored services.
    - Startercenter North Rhine-Westphalia offers **start-up help** for people setting up their own business: they advise and provide information at 75 locations across the state on founding and company development.
    - **Flanders Chambers of Commerce Alliance** (VOKA) in collaboration with Flemish Agency for Innovation and Entrepreneurship (VLAIO) offer different routes to support entrepreneurship to StandUp, StartUp and ScaleUp with coaching, network, and meeting with potential investors.
    - **Helping desk for the creation of new enterprises** by the Turin Chamber of Commerce, Industry, Handicraft and Agriculture.

Hybrid measures

Throughout the descriptions, reference has already been made to programs combining different types of measures. Hybrid measures are largely developed by specific actors and programs, which deploy their **activity in a more global and inclusive way.**

Combine mostly funding and grants with training and mentorship opportunities. For example:

- **The Media Founders Centre** in North Rhine Westphalia offers 10,000 € in start-up capital, practical input and experienced coaches and mentors to accelerate and consolidate the start-up phase. There is also a following program for those alumni who have already established basic structures and are facing new challenges as they become more professional.
- **Innovation Funding** by the Journalismus Lab (State Institute for Media) in Media and Audio Innovation in North Rhine-Westphalia offer a grant of 15.000€ for prototyping, mentoring, and coaching media start-ups who want to be supported in the further development of their product for six months or want to be supported in the development of innovative media formats, media products or distribution channels in the audio sector.
- **Coaching and training and call for funding** dedicated to specific projects aiming to the sustainable development of cultural organizations by the Department of Culture and Tourism of the Piedmont Region and carried out by the Piemonte dal Vivo Foundation.

4.4. Public-private partnership framework

Clusters and hubs and Research centres and innovation networks are the main stakeholders in this public-private partnership framework to boost innovation within Cultural and Creative Sectors and Industries.

Looking at what participant organizations say, on average **they work with mainly 6 different types of stakeholders**. The most relevant, selected by the 77% and 90% of the cases, are:

- Creative professionals external to the company (90,6%)
- Companies in other sectors (86,8%)

— Public organizations or Institutions (Local) (84,9%)
— Regional or National Funding Organizations (83%)
— Other companies within the same sector (83%)
— Education Centres (Universities) (77,4%)

The least relevant stakeholders are Research Centres (47,2%) and European Funding Organizations (45,3%). It should be noted that European funding was an important one, but it’s not selected as a relevant stakeholder. By contrast, less relevant funding institutions as local governments gain relevance as stakeholders.

Graphic 6. Type of stakeholders with which participant organizations works

Source: own preparation based on questionnaire information

Below are examples of the type of agents and collaborations that occur in the regions.

Clusters and Hubs

According to European Cluster Collaboration Platform[1], clusters should be considered as regional ecosystems of related industries and competences featuring a broad array of inter-industry interdependencies. They are defined as groups of firms, related economic actors, and institutions that are located near each other and have reached a sufficient scale to develop specialised expertise, services, resources, suppliers, and skills.

Research and innovation in the cultural and creative industries is usually nurtured by locally clustered firms and university's research centres as main actors in the knowledge exchange networks. The collaboration between private and public sectors to implement the research and innovation has its own agents and varies among the regions:

- **Cross-sector hubs** to explore and develop intersections between art, science, and technology to boost the digital transformation of society as the **Art, Science and Technology Hub** (Hac Te) in Catalonia. It is a joint-governance model, which has the support of Governmental agents, the Barcelona Chamber of Commerce, research institutes, universities, and high-tech facilities.
- **Communities** like **RIS3CAT Community** is a public-private sector association formed by different entities (companies, technology centres, universities, and other agents of the R&D system). Among the RIS3CAT Community, there is RIS3CAT Media Community that works to promote innovation based on the intersection between science, technology, creativity, and society and the development of new formats in entrepreneurship and business incubation.
- **Network of clusters** aimed at increasing the competitiveness of companies through cooperation and with the support of institutions and universities. For instance, **Flanders Smart Hub** is a network of tech clusters (including food and creativity hubs) that offers incubation to start-ups and established companies in many fields of digital technologies. The Basque Country has created an important network of clusters also which has meant strengthening the Basque industrial fabric. Since 2021, the departments of Education and Culture and Language Policy of the Basque Government have

[1] https://clustercollaboration.eu/cluster-definitions

promoted the **Ksigune cluster of Cultural and Creative industries**. It is a strategic tool to develop actions in the fields of higher education, research, innovation, and transfer related mainly to the needs of the cultural and creative sector.

— In terms of creative and cultural industries in Piedmont, the main cluster is **Turin Social Impact**, an alliance between companies and public and private institutions to boost Turin as a city for doing business and finance by intentionally and jointly pursuing objectives of economic profitability and social impact. A cluster of skills, activities, and services to strengthen and promote the local ecosystem within the framework of the 2030 Agenda.

— **Cooperation between university and companies** as **Innovation Hub** at the University of Applied Sciences Düsseldorf in North Rhine-Westphalia. It is a cooperation between the university and companies in the digital economy on an equal footing. Located also in North Rhine-Westphalia, there is **Creative Campus Detmold** is a hotspot for cooperation between universities, vocational training, cultural institutions, and companies.

— **Creative networks** as CREATIVE.Spaces by CREATIVE.NRW (Competence Center and Consultancy for creatives by North Rhine-Westphalian Ministry for Economic Affairs, Innovation, Digitalization, and Energy). There are 20 networks and all of them are working on innovative projects, some of them with companies, some of them also in cooperation with universities and cities. For example, **Impact Hub Ruhr** is part of a global network and is committed to anchoring innovation through sustainable approaches in society and the economy. They connect freelancers, creative people, social entrepreneurs, and companies sharing the same mission and innovation is shared through unusual partnerships.

— **Knowledge hubs and clusters** are also relevant as the **Data Science for Social Good Centre** located at OGR in Torino (Piedmont), knowledge hub where scientific research is conducted on the applications of data, data science and artificial intelligence for social impact and sustainable development. In the **22@ district**, located Barcelona, there are more than a hundred small and medium-sized businesses with creative components that have created **a knowledge** cluster. On a little over 200 hectares of what used to be industrial sites there are now more than 1,500 companies linked to the media, IT, energy, design, and scientific research. Recently, it has been presented the **Catalunya Media City** that will become a centre of research, innovation, and production for the audio-visual, video game and digital sector offering production facilities, business technology and advanced training.

Research centres and innovation networks

There are research groups and centres in the regions, most of them in a public-private partnership, that **focus on network technology and innovatio**n within technology development, applied research, artificial intelligence, visual computing, energy, and smart systems applied to Cultural and Creative Industries:

- **Eurecat, Technology Centre of Catalonia** is the main agent in public and private cooperation in research and innovation and in the implementation of the technological strategy of Catalonia, also applied to CCSIs.
- **KreativInstitut.OWL** in North Rhine-Westphalia. Recently created in 2021, performs a transfer function between science, business, and society in the creative sector under the leadership of the Technical University of Ostwestfalen-Lippe in association with the University of Paderborn and the University of Music Detmold.
- **Visionlabs** is the Institute for visionary product and innovation development at the University of Wuppertal, North Rhine-Westphalia.
- **The Cultural Observatory of Piedmont** is a public-private partnership born from the agreement between institutions and local administrations, foundations with a banking origin, trade associations, non-economic public bodies, public and private research institutes founded in 1998.
- **Basque Research and Technology Alliance** (BRTA) promotes collaboration, excellence, specialization, and critical mass in R&D to respond to the challenges of the Basque Country.
- **Tecnalia Research and Innovation Foundation** is the largest center for applied research and technological development in Spain, a benchmark in Europe and a member of the Basque Research and Technology Alliance. In collaboration with companies and institutions to improve their competitiveness, the quality of life of people and achieve sustainable growth. Its main areas of action: smart manufacturing, digital transformation, energy transition, sustainable mobility, personalized health, and urban ecosystem.
- **Basque Culinary Centre** main aim is higher education, research, innovation and promotion of gastronomy and nutrition. It is a pioneering

academic institution worldwide and contains a Faculty of Gastronomic Sciences attached to Mondragon University and a Centre for Research and Innovation.

- **Imec, Flanders' strategic research center for digital and nanotech**, is dedicated to innovating across a wide range of ICT-centered industries relevant to network modeling, innovation, and development.

Other relevant stakeholders

There are other stakeholders that cannot fit in the taxonomy exposed above but have also a role in the CCSIs innovation ecosystem. For instance:

- **Hangar Piemonte** is a Cultural Transformation Agency aimed at spreading the design culture and enhancing the ability to make strategic decisions. It is a project by the Department of Culture and Tourism of the Piedmont Region and carried out by the Piemonte dal Vivo Foundation. It is aimed at anyone who wants to develop their skills and managerial skills in the cultural field, from freelancers to institutions, associations, non-profit organizations. The goal is to spread the design culture and enhance everyone's ability to make strategic decisions.
- The **Fitzcarraldo Foundation** in Piedmont contributes to the development, dissemination and promotion of innovation and experimentation in planning, research, training and documentation activities on management, economy and culture, arts, and media policies. Systematically collaborating with local, regional, national, and international bodies and organizations.

4.5. Innovation's type

As explained in section 3 when describing the types of innovation, there are no frameworks designed to reflect the specific characteristics of innovation within CCSI. The conceptual work around the specific definitions and typologies of these sectors is, currently, an open process under construction. The development of the *Contrast* project is, in fact, the result of this need for reflection, design and debate around its own framework to characterize and patronize innovation in the CCSI.

Considering this complexity and understanding the difficulties that could generate to the participant organizations, this Pilot Study has been used to, through the data obtained in the survey:

1) **Study the type of innovation with the best-established concepts through closed questions.**
2) **Explore specificities and new concepts of innovation in the CCSIs through the analysis and coding of open questions**, identifying categories that arise from the discourse of the participating organizations.

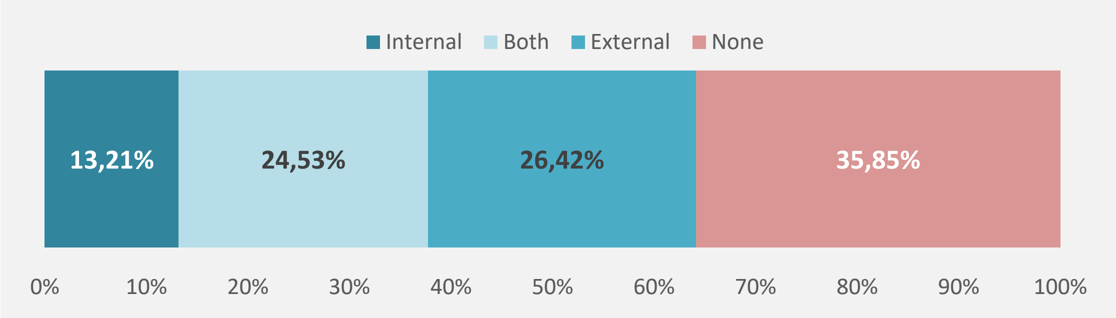
Firstly, innovation is studied based on the best-established concepts. As a reminder, these are:

Internal innovation	**Artistic, product or service innovation**	**Social innovation**
versus	versus	versus
External innovation	**Methodological or process innovation**	**Technological innovation**

For each pair of options, participant organizations could select both, just one, or none.

The dimension between internal and external innovation shows the highest rate of "**None**" answers (35,85%). "External" or "Both" also register an important level of answers

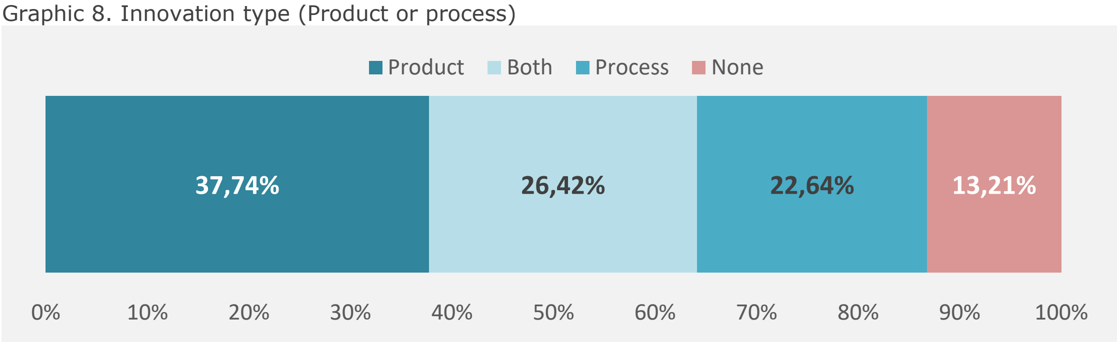
Graphic 7. Innovation type (External or Internal)



Source: own preparation based on questionnaire information

Between product or process innovation, "**Product**" is the most selected answer (37,74%), followed by "Both" (26,4%) and "Process" (22,6%).

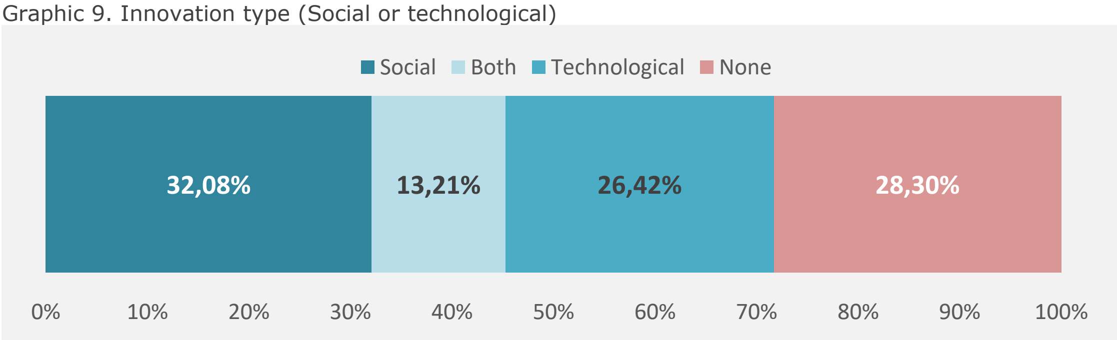
Graphic 8. Innovation type (Product or process)



Source: own preparation based on questionnaire information

Finally, between social or technological innovation, "**Social**" is selected by the 32,1% of the cases, "None" by the 28,3% of them and "Technological" by the 26,4%.

Graphic 9. Innovation type (Social or technological)



Source: own preparation based on questionnaire information

From these answers is important to highlight, on the one hand, that **product and social innovation are the most selected** types of innovation and, on the other hand, that **internal innovation is the least selected** option.

It is also a remarkable fact that "Both" option is important in the internal/external axis and in the product/process axis, and that "None" is also relevant in the internal/external axis and in social/technological axis. The importance of "Both" and "None" categories points at the **special nature of innovation in CCSIs** and could also be an effect of the (lack of) **knowledge about the criteria's used**.

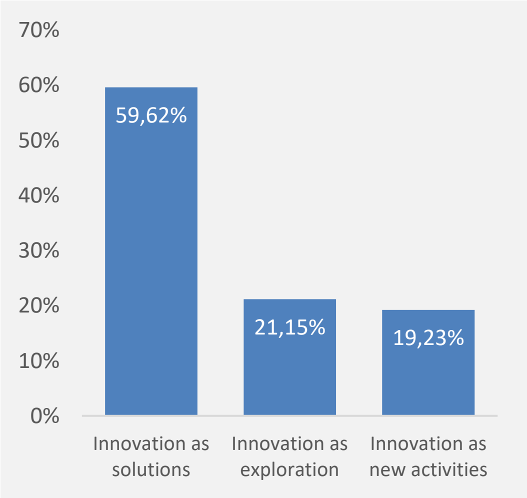
Secondly, the analysis of open questions is addressed. When participants are asked to describe which **elements they do take in consideration to select the type of innovation**, the answers obtained point to three main ideas:

- Innovation as **solutions** (59,6%). In these cases, the projects refer to the solution of specific needs, previously well detected.
- Innovation as **exploration** (21,1%). By contrast, innovation as exploration is related with projects with less expected results, where value remains in the process.
- Innovation as **new activities** (19,2%). It relates to the concept of creating, producing, and programming original social and cultural activities.

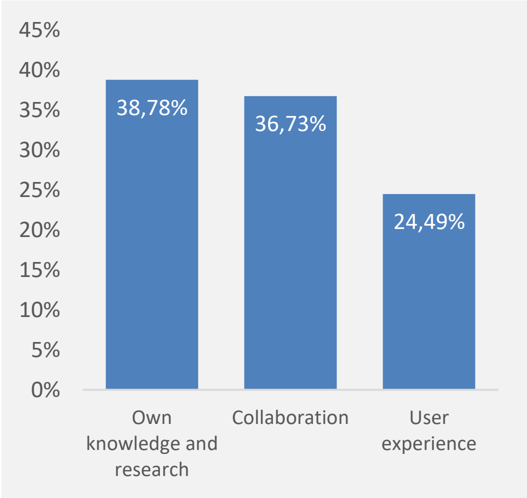
Analysing answers related with **how the organizations introduce innovation** in their projects, is it possible to identify three **trends**:

- Through **own knowledge and applied research** (38,8%).
- Through **collaboration** with other agents (36,7%).
- Through considering (analysing) **user experience** (24,5%).

Graphic 10. How participant organisations describe their innovation



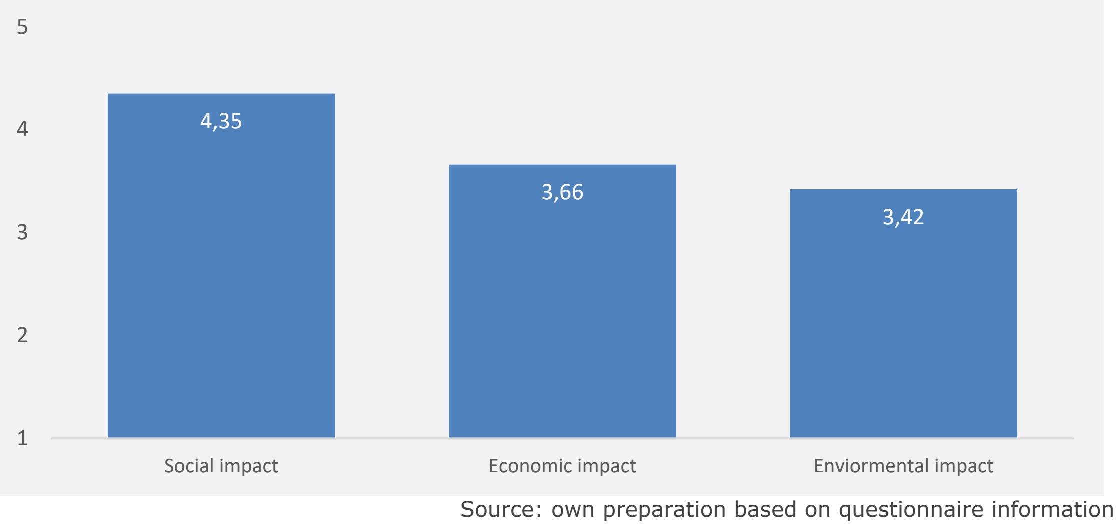
Graphic 11. How participant organisations introduce innovation



Source: own preparation based on questionnaire information

Concerning the type of impact generated chosen by the participant organizations, **social impact rated as high (5) has been chosen by 27 organizations**, in other words, half of the organizations participating in the survey. Economic impact rated as high (5) has been chosen by 19 organizations and environmental impact rated as high has been chosen by 12 organizations.

Graphic 12. Type of impact generated in a scale from 1 (low) to 5 (hight)



Source: own preparation based on questionnaire information

By **social impact** the survey is referring to the social cohesion or inclusion created by the company or project, the levels of accessibility, the generation of sense of belonging and the capacity of the project to reflect social diversity. **In all the regions social impact average is higher than economic and environmental impact**.

By **economic impact** the survey is referring to the profitability of the company, the generation of sustainable employment (especially after the pandemic) or the economic return obtained through intellectual property.

By **environmental impact** the survey is referring to the company or project's use of resources, their prevention of pollution and their contribution to awareness of environmental values. **It is the least impact chosen by the participant organizations**, being **Catalonia and the Basque Country the regions in which the average is the highest (3,86 and 3,85 respectively)** and being Piedmont the region with a lower average (2,50).

The study highlights the importance of the **quadruple and quintuple helixes** in the development of innovation in culture and creativity.

Through a closed question, the organizations had to answer about the impacts generated by their projects (social, economic, or environmental) but it is also relevant to explore the answers related with the **reasons and needs that they cover developing innovation**.

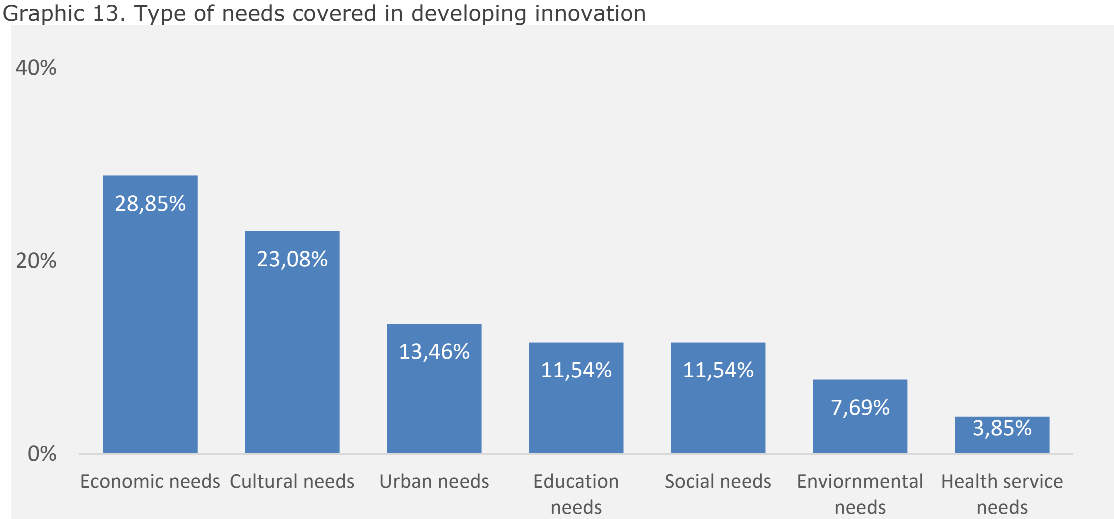
The questionnaire explores these reasons and needs with an open question. Analysing the answers, we found **seven different types of needs that emerge in different proportion** (Graphic 13):

1. Economic needs (28,85%).
2. Cultural needs (23,08%).
3. Urban needs (13,46%).
4. Education needs (11,54%).
5. Social needs (11,54%).
6. Environmental needs (7,69%).
7. Health service needs (3,85%).

It is relevant to point the existing **diversity of needs and their relationship with other sectors** (economy, urbanism, education, environment, health…).

Looking at how many times every need has been cited, the **Economic** needs appear at the top (28,9%), followed by **Cultural** needs (23%). The other answers range between 3% and 13% and can be classified as: Urbans needs (13,5%), Education needs (11,5%), Social needs (11,5%), Environmental needs (7,7%) and Health service needs (3,9%).

Graphic 13. Type of needs covered in developing innovation



Source: own preparation based on questionnaire information

Mainly **in Flanders and North Rhine-Westphalia, economic needs are the most cited,** while **in Catalonia and Piedmont cultural needs are the most mentioned**. In **Basque Country**, there are a **combination of economic, cultural, and social needs** on the top.

The **differences on the answers could be related with the areas and agencies that foster innovation in CCSIs in every region**: In Catalonia and Piedmont cultural areas seemed to have more presence. By contrast, in Flanders, North Rhine-Westphalia and Basque Country, CCSIs strategies developed with business areas are more present.

In addition, it must be considered that differences on the answers also correlates with the working areas of the selected projects in each region (a selection that implicitly shows each region's interest): more cultural in Catalonia and Piedmont, more transversal in Basque Country, and more creative in Flanders and North Rhine-Westphalia. With this information we can see that **different sectors are oriented to different types of innovation**.

Tendency to cover cultural needs	Tendency to cover transversal needs	Tendency to cover economic needs
• Catalonia • Piedmont	• Basque Country	• North Rhine-Westphalia • Flanders

Finally, it's interesting to note that participant organizations highlight the **social dimension** of their projects **even when they tend to cover economic needs**. In that sense, there are many organizations that seek to cover economic needs while they generate a social impact. Based on these answers, it seems clear that cultural and creative agents feel more comfortable with social vocabulary than with economic one.

5. Measurement of innovation within CCSIs

Measurement of innovation within the CCSIs is necessary to reflect the role that CCSIs play in the economy and the society as well as to gather evidence-informed policies.

There are two hypotheses about measurement difficulties:

- The CCSIs are **under-represented in the standardized innovation statistics and indicators** for all sectors. We know that CCSIs are more innovative than the data reflects.
- The **inability of these general tools to reflect the specific characteristic of innovation in CCSIs**. CCSIs innovation studies are often constrained by the need to work with the existing datasets and with sources that have not been designed for this sector and that have not been thought for tracking innovation. There is scepticism about the capacity of the existing indicators to represent the situation of innovation on the CCIs outside the general frame.

In addition to analysing the conditions of the context (developed in the previous chapters and Annex 1), the pilot study has tried to delve into two directions.

- Firstly, using a quantitative approach, agents have responded about their level of knowledge and about their assessment of the relevance of the European Innovation Scoreboard (EIS). The main objective of the EIS is to carry out an analysis comparing the innovation performance of the member states of the EU-27 and to discover strengths and weaknesses of research and innovation systems.
- Secondly, and with a qualitative point of view, they have been asked to propose adequate indicators to reflect the singularities of the CCSIs.

Most of the participant organizations (94,3%) are not familiar with innovation performance indicators as EIS. Only three of the 53 cases analysed knew about them and only one has completed all the survey. Thus, these figures show that awareness about innovation measurement among Cultural and Creative Industries is quite low, even though the organizations selected are highly innovative.

Table 3. EIS indicators overview

European Innovation Scoreboard		
Framework Conditions	**1.1. Human resources**	Newly graduated PhDs (% group 25-34 years)
		Percentage of population between 25 and 34 years of age with tertiary education
		Percentage of population from 25 to 64 years old participating in lifelong learning
	1.2. Attractive research systems	International scientific co-publications per million inhabitants
		Scientific publications among the top 10% most cited internationally as a percentage of the total of scientific publications in the country
		PhDs from outside the EU as a percentage of the total number of PhDs in the country
	1.3. Environment open to innovation	Broadband penetration
		Entrepreneurship boosted by the opportunities (motivational index)
Investments	**2.1. Financing and support**	Public expenditure on R&D as % of GDP
		Venture capital as % of GDP
	2.2. Business investments	Private expenditure on R&D as % of GDP
		Expenditure on non-R&D innovation as % of the total business figure
		Provision of training for businesses to develop or update the ITC skills of their staff
Innovation activities	**3.1. Innovators**	Small and medium-sized businesses who are innovators in product or process as % of small and medium-sized businesses
		Small and medium-sized businesses who are in marketing or organisation as % of small and medium-sized businesses
		Small and medium-sized businesses with internal innovation as % of small and medium-sized businesses
	3.2. Links	Small and medium-sized businesses who collaborate with others as % of small and medium-sized businesses
		Public-private co-publications per million inhabitants
		Private co-financing of public expenditure on R&D
	3.3. Intellectual assets	PCT patent applications per billion of GDP (in PPP euros)
		EU commercial brands per billion of GDP (in PPP euros)
		EU designs per billion of GDP (in PPP euros)
Impacts	**4.1. Impacts on employment**	Employment in knowledge-intensive activities as a % of total employment
		Employment in companies in innovative rapid growth sectors
	4.2. Impacts on sales	Exports of medium and high technology products
		Exports of high knowledge level services as % of the total of service exports
		Sales of innovative products new to the market and to the company as % of business amount

Source: own preparation

As the experts affirmed in the contrast process carried out in 2021, the EIS' conceptual framework (innovation framework conditions, investment in innovation, innovation activities and impacts) could well apply to the analysis of innovation in / from CCSIs as it enables capturing a complex and multifaceted concept through the measurement of different underlying dimensions. But what's the average of the EIS indicators' relevance according to the answers chosen by the organizations in the survey to measure innovation in the Cultural and Creative industries?

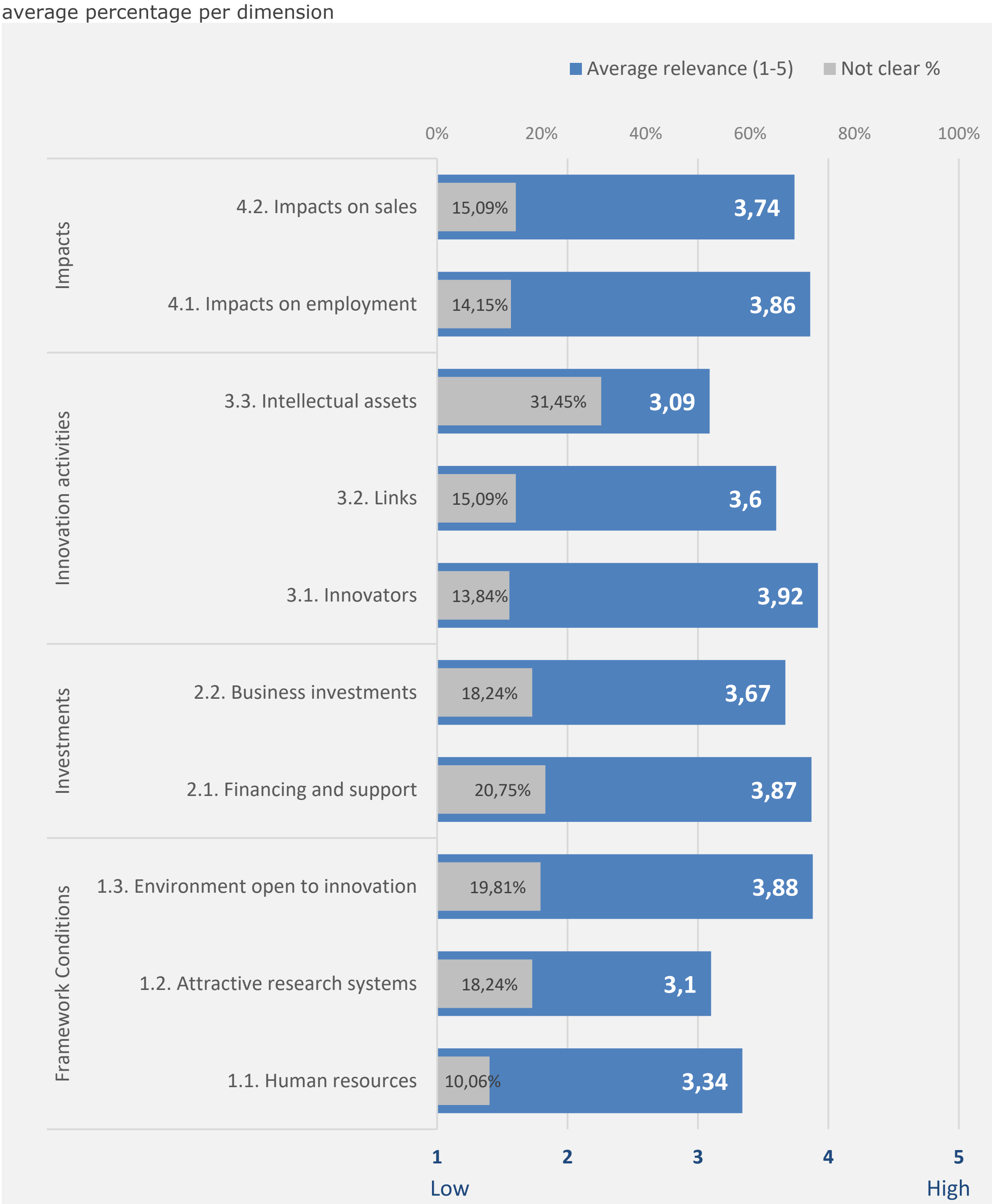
On an assessment scale of 1 (least relevance) to 5 (high relevance), it stands out that all the indicators are considered relevant, with most assessments between 3 and 4. Specifically, looking at the dimensions and its indicators mean:

— **Innovators indicators** are the most relevant ones by the participant organizations scoring **3,92.**
— **Environment open to innovation, financing and support indicators and impacts on employment** are the second block of indicators most rated by the organizations with 3,88, 3,87 and 3,86 respectively.
— **Attractive research systems** with a 3,10 and **intellectual assets indicators** with a 3,09 are the least rated by the organizations to measure innovation in the Cultural and Creative Industries.

In addition to assessing its importance, the survey also gave the option to point out that the indicator is "**not clear**", and the results show a high number of answers in this regard:

— The indicators related to **intellectual property**, in addition to being considered with a lower degree of importance than the rest, are noted as unclear.
— **Human resources** dimension has the lowest percentage of "not clear" answers, especially those related to PhDs and lifelong learning.

Graphic 15. EIS Scoreboard. Average of the indicator's relevance (1 least – 5 high) and "Not clear" average percentage per dimension



Source: own preparation based on questionnaire information
See annex 2 (questionnaire data exploitation) to consult a table with the score obtained for each indicator

Participant organizations have had the chance to point out if there were indicators missing to measure innovation in the Cultural and Creative Sectors and Industries. The 53% of the organizations have answered the question and some of them have suggested some indicators:

- **Related to the context**: Number of artists and cultural and creative professionals in relation to the population; STEAM programmes; Creativity indexes; Average time needed to raise 0.5M or 1M to build a start-up. Average funding raised in pre-seed, seed, and series A rounds.
- **Related to cultural innovation**: Number of artworks delivered or registered; cultural offer on a territory; Public entities promoting innovation such as museums or festivals to a wider public; Innovation with the public; Innovative artistic and cultural products.
- **Related to social innovation**: Innovation in its social dimensions or in participating processes. In the field of social innovation and in the whole context of sustainability, less classical or market-driven indicators should play a role.
- **Related to innovation**: Collaborative economy (open licensing, exchanges), Cross-fertilisation programmes between sectors; development of divergent thinking; how balanced innovation is across several sectors; collaboration among start-ups and companies as a new way of open innovation collaboration and number of start-ups set up by year.

In conclusion, the results of the analysis confirm that most indicators from existing sources to measure innovation across sectors might well capture, in general terms, the innovation of European countries and regional neighbours. In their current formulation, these indicators fail at measuring the specific contribution of the CCSIs to innovation.

As pointed out in the conclusions of the Contrast process, this may be due to several factors such as:

- The context-specific nature of innovation and CCSI perimeter and definitions.
- The lack of awareness among CCSI, about what can be considered 'innovative'. These sectors are used to work creatively and they may fail at recognizing innovative work. The problems of definition and awareness make more difficult the measuring of innovation.
- The diverse and fragmented nature of CCSI: while industrialized sub-sectors of CCSI may be captured relatively well by innovation datasets, these sectors are in general structurally very different from other

economic sectors. In particular, the project-based nature of work, the extremely small size of companies, the diverse nature of actors (private, public, not for profit) as well as the free-lance status of most cultural and creative workers make it unlikely for most CCSI to be captured either by official statistics or surveys using a representative sample of the general workforce / business population.

As one of the organizations participating in the study says, just by rethinking economics is possible a transformation towards a resource-conserving and more just way of life. The sooner we say goodbye to conservative growth scenarios and do not link the concept of innovation (only) to economic success, the easier it will be to achieve the urgently needed change. And for this, it is necessary to define indicators capable of showing the potential of innovation in the CCSI.

Moving forward

The pilot study has confirmed the need to proceed in the design and measurement of indicators that reflect the specific characteristics of innovation in CCSIs. In this line, future work lines are opened from three points of view:

1. The new contents to be incorporated into the current measurement models (EIS and RIS) must be adapted to the CCSIs.
2. The methodological approach that outlines the development of indicators and sources of information capable of providing data that account for the characteristics of innovation in these sectors and its evolution.
3. The process of work and research, which allows to obtain in parallel basic indicators of innovation that, in a preliminary way, already allow a synthetic characterization of the object of study.

In relation to the **contents** to be further investigated:

— Concretion of proposals to have a more specific glance at the CCSIs starting from the EIS, considering its **structure** valid in four main sections (conditions of the context, investments, innovation activities and impacts).

- Development of **specific innovation indicators to the CCSI.**Considering the EIS’ structure and their current indicators, we have come up with the examples below:

    - **Context**: population engaged in artistic and creative activities; advanced training offer within the CCSIs and graduates in studies related to CCSIs; existing research groups in CCSIs.

    - **Investments**. Public expenditure dedicated to the CCSIs in relation to the total amount and dedicated to innovation projects in the CCSIs; source of public funds dedicated to innovation projects; investment by companies in innovation activities and life-long learning.

    - **Innovation**: emphasis on cross-fertilization projects, patents related to CCSIs and royalty revenues.

    - **Impact**: weight of employment in innovation projects in CCSs, creation of innovative companies in CCSIs.

- Considering the particularities of the CCSIs and the development of its own system, it is necessary to evaluate how to measure the dimensions of intrinsic value (creativity, new uses, new habits); instrumental (economic, social, and environmental value) and shared social value (governance). In this line, the pilot study confirms the importance of the **social dimensions** of innovation projects in the CCSIs and the **diversity of partners, stakeholders and collaborative projects**. An aspect that is very characteristic of these sectors given the variety of the profile of agents that make it up (public, private and third sector).

- Deepening in **key dimensions** for the CCSI that have received low ratings taking in consideration the importance they have: **intellectual property** (% royalty income, % open licenses) and **life-long learning** (% of workers participating in innovation training programs).

- Give **more prominence to impact indicators**, especially social and environmental indicators. An interesting way detected in the study has to do with the **needs** to which the innovation projects analyzed respond.

There is a great deal of work to be done in this line and there are impact analysis models that can serve as guidance for its application from the perspective of innovation.

This means that, **methodology wise**, two ways of working are opened:

— A look at the CCSIs from the EIS itself, mainly through the expansion of samples of CCSI organizations participating in the current sources that nourish the EIS and the RIS. It is well known that participation in innovation and R&D surveys is currently limited. This expansion of samples should be accompanied by **an awareness-raising and pedagogical** work with the agents so that they become aware of the implications of innovation and the specificities of its measurement. The pilot study has found a lack of knowledge of current sources.

— Design, contrast, and assessment of the viability of new indicators to develop our **own system.** There is a lot of work to develop dashboards of specific indicators for the measurement of innovation in CCSIs.

Regarding the **work process**, the main tasks are:

— Approach of a progressive and parallel work that combines the **design of a dashboard of viable, available and quickly obtained KPIs** while more complex and sophisticated systems are developed and strengthened.

— **Detection and analysis of the potential of primary information sources available at European and regional level**. Thus, the need for common and standardized sources is identified as very relevant. If only regional sources not harmonized at European level are considered, the disparity of methodological and statistical criteria makes it impossible to obtain comparable results.

— **Identification and progressive contrast of quantitative indicators** already in use or well defined, and continuity of an **exploratory work with more open and qualitative question formats**. This line of work has given interesting clues both for the contrast of ideas and for the exploration of new perspectives.

6. Report highlights: moving on towards measuring innovation within CCSIs

This research has helped to take a step forward to understand what the contribution and meaning of innovation on the CCSIs is. It is a step forward, showing certain paths that may be explored, but more research is still needed.

In relation to regional contexts

Firstly, in chapter 2 a brief characterization of the regions in terms of demographics, socioeconomics and innovation development has been done. This view has shown that the five analyzed regions have in common an urban and economic level that is higher than the European average. Despite this, and in line with the usual models of classification of European economies and welfare states, even among these five regions it is possible to detect at least two different scenarios: one where Flanders and North Rhine-Westphalia are located (with better employment and innovation indicators), and another where the Basque Country is located, Catalonia and Piemonte. The case of the Basque Country presents certain particularities, since it is in an intermediate position in certain indicators: higher GDP per capita and higher density than Catalonia and Piemonte, slightly ahead in terms of innovation, although with similar employment levels. In any case, we must bear in mind that the Basque Country, Catalonia and Piemonte are leading regions (in terms of urban, economic and innovation) in their close environments.

Context type I	Context type II	Context type III
• Catalonia • Piedmont	• Basque Country	• North Rhine-Westphalia • Flanders

Subsequent analysis, specifically referring to CCSIs, has shown that it is relevant to address the general context in which each region is inserted. Contexts exert an influence, and indirectly contribute to explaining certain aspects of CCSIs and their innovation by condensing structural conditions, opportunities, and limitations. In this sense, some correlation has been observed between the general context in urban and economic terms and some aspects related to CCSIs and their innovation.

Therefore, for the future it is relevant to deepen the general characterization of the regional context and the creation of a typology to classify them. As has been pointed out, this typology may well be supported by the usual sociological models of classification of European welfare schemes as a starting point.

In relation to the definitions and perimeters of the CCSIs

Both in terms of perimeter and from the strategic point of view, there are differences and nuances between the CCSIs because of the **highly diverse and fragmented nature** of them. Although there is a core of sectors that share the five regions, in each context/ region they are structured and classified in a different way. This difference makes it difficult to compare some basic indicators (employment, gross value added…). There are also specificities of each region that imply that some leading sectors in a certain context have no relevance in others (the language industries, fashion, for example).

There are several taxonomies and perimeter approaches to the cultural and creative sectors across the regions. It may happen that, **even considering the same perimeter, sectors are grouped and classified in different ways**; it can also happen that **sectors with economic and symbolic weight in certain regions have no importance in others** (for example, gastronomy stands out in Piedmont and Basque Country); and it can happen that because of a **difference of criteria** some sectors are included or not depending on the regions (for example, there are differences regarding the inclusion of trade). It is important to note that the inclusion of software in some cases cause significant differences.

The selection of good practices by the regional coordinators serves to approximate certain regional priorities, which are in fact in line with the three general regional contexts observed.

Cultural orientation	Transversal Orientation	Creative orientation
• Catalonia • Piedmont	• Basque Country	• North Rhine-Westphalia • Flanders

There is still a long way to go towards a precise and harmonized perimeter of CCSIs. That's also a relevant challenge for the study of CCSIs and for a common innovation measurement model in CCSIs, given that different sectors have diverse needs and outcomes.

In relation to different actors' role and intervention tools

It exists a great diversity on addressing the support to CCSIs. First, policy areas implied conform one relevant axis. In this regard, there are **two general patterns** detected: **those cases were culture area plays the main role in promoting CCSIs, and those were CCSIs support comes from programs carried out by various areas**, basically related to business sphere.

Catalonia and Piemonte are again grouped on the one hand and North Rhine-Westphalia, Flanders and Basque Country on the other. It should be borne in mind that the case of the Basque Country can represent an example of transition from one model (central role of the area of culture) to the other (confluence with other areas).

Culture policy area main role	Confluence of diverse policy areas
• Catalonia • Piedmont	• North Rhine-Westphalia • Flanders • Basque Country

Considering the possible existence of specific or general strategies, it must be considered that, even when culture policy area plays de main role, there are specific agencies and strategies focused on CCSIs. It seems that the attention they gain for sustainable economic development, and their sectorial particularities, make these specific approaches necessary. Thus, with the study carried out, no differences are observed in this regard.

Another important dimension to bear in mind is that there are **different administration levels** in the field: the regional level seems to be the most important (specifically in Flanders, Catalonia and the Basque Country), and the European level also has a significant impact as the National and Local administrations. All the levels play different roles through different tools, attending to their resources and administrative competences.

The diversity is even greater when considering the possibility of economic and non-economic measures, and the hybrid measures that combines both

types. The programs and public policies are mixing economic, non-economic and hybrid measures from public bodies within diverse policy areas and targeted to CCSIs. These programs are mainly focused on the modernization and innovation of CCSIs through lines of grants; improving CCSIs competitiveness and internationalization strategies through training opportunities, consulting services and mentorships programs; promoting entrepreneurship among the CCSIs in the context of post-pandemic economic recovery; highlighting the importance of the cultural and creative industries as a sector of its own and as a driver of innovation; promoting the collaboration of creative enterprises with enterprises in other productive sectors, as well as with universities and research bodies.

The programs and public policies towards innovation and entrepreneurship targeted to all industries and that are not specific to CCSIs are focused on specific advice and support for start-ups in which funding is provided for the development, testing, and implementation of the start-up concept before it is implemented and internationalization strategies. The hybrid measures are combining mentoring, advice, and start-up grants to ensure the success of innovative projects; and supporting research and projects development.

Finally, public-private partnership provides Cultural and Creative industries in their respective regions with dedicated clusters to boost innovation, increase the competitiveness of CCSIs and the cross-sectoral collaboration with the support of institutions and universities; research centres and innovation networks linking research-based transfer of ideas and the Cultural and Creative start-ups to proof their future competitiveness and align their innovation with relevant technological, economic, and social trends; and stakeholders contributing to the development, dissemination, and promotion of innovation within Cultural and Creative Sectors and Industries.

Anyway, although the approaches may be diverse, **in all cases there are strong ecosystems to support innovation**, as the great number of initiatives and programmes mentioned points out.

Two other highlights in this dimension are:

— First, it should be noted that some innovative projects do not receive public funding and that non-economic measures are also important. In fact, non-economic measures across regions mentioned in the survey are more numerous than the economic ones.

— Second, there could exist information deficits because the awareness about incubators and learning and training opportunities is not complete.

In relation to the types of innovation

Most of the organizations select several variables to define the type of innovation they do. It is relevant to highlight the fact that **most of the organizations do not only select one variable in each dimension but both**. For instance, choosing internal and external innovation; product and process innovation or social and technological innovation.

Product, service, or artistic innovation it has also been selected by most of the organizations and in some cases jointly with process or methodological innovation. There is a not negligible percentage of organizations in all the regions that do not choose any type of innovation for their organizations even though they have been selected as innovative organizations. The lack of debate around innovation within Cultural and Creative Industries and thus the lack of knowledge about innovation’s language could explain this fact.

Social impact has been rated as high by half the organizations, but it has also been selected by most of the organizations, in some cases, jointly with economic impact and in few cases with environmental impact.

Environmental impact as high is the least selected by the organizations, as social or economic are the preferred options. Environmental impact it is always selected jointly with social or economic impact.

Most of the projects describe their **innovation as solutions to specific needs** (needs previously well detected or known), but innovation is **also understood as exploration** (where value remains mostly in the process, with less expected results) **and new activities** (where value remains in generating original social and cultural activities).

According to participant organizations, **innovation is introduced through basically three different ways: own knowledge and applied research, collaboration with other agents and analysing user experience**.

In most cases, participant organizations **highlight the social dimension** of their projects, even when they tend to cover economic needs. In that sense, there are many organizations that seek to cover economic needs, but they say that social impact is the main impact they search to achieve.

The characteristics of innovation seem rather specific to the sector and not to the contexts. In this sense, it is interesting to note that **different sectors produce different types of innovation**. Given that different regions have different interests (more creatively oriented, culturally oriented, or more transversal; as described in chapter 4.1), they also have different innovation profiles. **There seem to be a pattern linking region's interests, type of areas and strategies supporting CCSIs and type of innovation**.

Tendency to cover cultural needs	Tendency to cover transversal needs	Tendency to cover economic needs
• Catalonia • Piedmont	• Basque Country	• North Rhine-Westphalia • Flanders

Finally, according to the model of helixes, the results of the study highlight the importance of the quadruple (civil society) and quintuple (habitat) helixes in the development of innovation in culture and creativity sector because it could introduce more disruptive changes in the way of approaching innovation processes and of seeking other types of results.

In relation to the measurement of innovation in the CCSI

The pilot study has served to confirm, firstly, that **most indicators might capture the innovation performance** of European countries and regions **in general terms,** but they **fail at grasping the CCSIs specific contribution to innovation** in their current formulation.

Secondly, it allows us to glimpse new ways of working in three directions: contents, methodology and work process.

Regarding the **contents**, the work should contemplate the possibility of developing a specific glance at the CCSIs from the current measurement models and the design of **innovation indicators of the CCSI**, considering their particularities. It stresses the importance of considering social and environmental aspects, as well as process.

In addition, it is necessary to extend the assessment of the relevance of the current items of the EIS. With the current data, limitations are detected in relevant (a priori) dimensions such as **intellectual property** and **human resources.**

This means that, in relation to the **methodology** for monitoring innovation in the CCSIs, two lines of work are opened: to enable the contribution of the CCSIs to innovation from the EIS itself (with the expansion of samples with organizations of the sector as the main action) or to develop a system of its own in terms of CCSIs, parallel to the EIS.

Regarding the **workflow**, there is **a progressive and parallel work** at two speeds: the design of a dashboard of viable, available to quickly obtain KPIs while more complex and sophisticated systems are developed and strengthened. To this end, it is necessary to advance in the analysis of existing sources, with the aim of identifying common sources allowing to obtain comparative results. In addition, it is also important for the process to continue contrasting and exploring new indicators relevant to the CCSI.

7.Annex

Annex 1. Detailed regional contexts

CATALONIA

CREATIVE AND CULTURAL SECTORS

The classification of Cultural and Creative industries in Catalonia is carried out by IDESCAT (Statistical Institute of Catalonia) and consists of 9 groups (related to KEA classification).

1. Cultural heritage, archives, and libraries
2. Books and press
3. Visual arts (design included in this subsector)
4. Performing arts (theatre and music)
5. Audiovisual and multimedia (videogames included in this subsector)
6. Architecture
7. Advertising
8. Other services related to culture (including media representation services, and newspaper edition)
9. Industrial activities related to culture (including graphic arts, impression, reproduction of recorded media)

In 2019, there were 188,100 workers in the cultural sector in Catalonia, according to the Labor Force Survey (20,350 more than in 2018). Out of this total, 68.2% were salaried. This implies that the **cultural sector employs 5.47%** of the workers of Catalonia. Companies in the cultural sector represent 35.9% of cultural companies in Spain.

The gross value added (GVA) of the cultural sector in 2018 was **€4,669 million** according to IDESCAT (Statistics Institute of Catalonia) and it represents 2,10% of the gross value added of the region. The sector that tops the list is the **audiovisual and multimedia** sector (859,967€), followed by **advertising** (554,804€), **books and press** (759,065€), industrial activities related to culture (554,804€) and visual arts (508,908€).

The video games sector in Catalonia is recognized as one of the most dynamic, creative, and stimulating sectors in all of Europe. **The video game sector** has experienced growth in this period, both in number of companies and in turnover: from 69 companies and 53 million euros in 2011 to 167 companies and 473 million euros in 2019. The 167 companies include the 121 companies constituted (to whom the invoicing data corresponds) and 46 groups of professionals that develop a project but without commercial registration as a company.

In the last 5 years, Catalonia has been the 2nd region in Europe in FDI (Foreign Direct Investment) job creation in the video game industry. In the same period, Catalonia has been the 3rd European region in FDI projects in video games, representing a capital investment of 36.31M€, and has concentrated the 80% of the FDI projects received within the video game sector in Spain.

Even though **tourism** it is not directly considered as a CCSI it accounts for **12% of Catalan GDP** and has become one of the most notable economic activities. In fact, Barcelona and Catalonia are one of the top European destinations and received more than 19 million foreign tourists in 2019. (In 2020 the number dropped to 3.8 million because of the pandemics).

R+D+I policies

In Catalonia, research, development, and innovation (R+D+I) executives are fundamentally subject to public policies at different levels:

- State
- Government of Catalonia (GC),
- Local authorities
- European Commission (EC).

Regarding the Government of Catalonia level, current framework policies are the Catalan Research and Innovation Strategy for Smart Specialization (RIS3CAT), the Catalan Agreement on Research and Innovation (PNRI) and the Catalan Agreement on the Knowledge Society (PN@SC), the latter of which is in the preparation phase.

The Ministry of Research and Universities undertakes the planning, running and execution of university and research policies, **while the Ministry of Business and Employment promotes business innovation and internationalization policies**. Other ministries also contribute to research and innovation policy in their respective areas of authority.

The State's policies on R+D+I are conveyed via the Spanish Strategy for Science, Technology and Innovation which is developed by the various state research and innovation plans. As far as EC policies are concerned, they are essentially those within the Horizon 2020 framework programme, and work is currently being carried out on the next framework programme, Horizon Europe. Finally, about the R+D+I policies of local authorities, there is an increasing number of initiatives in the municipality websites.

Government authorities tasked to suport CCSIs

In terms of **the cultural and creative industries**, the policy framework is structured in terms of regional level through the Catalan Government and municipalities:

Regarding the Catalan Government level, the main agent is the Catalan Cultural Department through its main specific institution in the field: **Institut Català de les Empreses Culturals** (ICEC) (Catalan Institute for Cultural Companies). ICEC advises and accompanies companies and cultural professionals in the different sectors: performing arts, visual arts, audiovisual, digital culture, books, and music and provides them with grants and tools for financing, as well as services for internationalization, business training and audience development. Through its actions, the ICEC collaborates in the construction of a competitive and quality cultural network and promotes consumption habits and the generation of audiences. Within this institution we find the recently created **Direcció General d'Innovació i Cultura Digital** (Directorate General of Innovation and Digital Culture).The objective of the DG, created in 2021, is to carry out all those actions that allow to properly locate cultural innovation by supporting projects and initiatives linked to digital culture, creating spaces for exchange and growth and transfer with universities, working on the production of innovative digital contents, virtual reality and other specialties while preserving the territorialization and dissemination of initiatives.

From the business sphere, the Catalan Government also has support programs through **ACCIÓ - Agency for business Competitiveness** within the Enterprise and Competitiveness Department. The agency advises companies from different sectors to boost their competitiveness in terms of funding, start-ups, innovation, internationalization, clusters, and foreign investment. Among the clusters boosted by this agency there are the Audiovisual Cluster of Catalonia, the Digital Cluster Association, the Catalan Foodservice, and the Catalan Fashion Cluster. The composition of the clusters is diverse: companies, organizations and research groups and associations. Their main purpose is to stimulate innovation and research through the promotion of intensive iterations, sharing tools, experience, and knowledge to efficiently promote technology transfer, networking, and the dissemination of information among the cluster's members with a view to generating value and business.

At a local level, we highlight the initiatives to support the cultural and creative sector carried out by the city of Barcelona, capital of the region, through **Barcelona City Council's economic development agency, Barcelona Activa**. They support Barcelona entrepreneurs and new start-ups from the business idea stage to consolidation. They offer business advice, training, spaces, connection to the entrepreneurial ecosystem and access to finance needed to develop successful companies.

Barcelona Disseny Hub is a main agent as it deploys a promotion policy in the areas of design, fashion, audiovisuals, crafts, and architecture, among others, welcoming and supporting the creative talent of the city and working with training centers, creators, and companies in local and international scenarios, thanks to the agreement between the Department of Economic Promotion and the Institute of Culture of Barcelona. The Department of Creative Industries of the Barcelona City Council has recently introduced a platform for the representation and participation of the creative industries sector, strategic for the economic and social development of the city. **Taula Creativa** (Creative Board) is a space for participation, debate and proposal that brings together the different agents of the creative sectors - schools, universities, companies, professionals, articulating bodies, dissemination programs and representatives of the administrations-, and representatives of audiovisual, fashion, design, architecture, restoration, computer applications and visual arts, among others.

In other Catalan cities, like Girona, there are local administrations supporting the CCSIs. The Office for the Promotion of Arts of the Girona City Council is a specialized management and coordination office that provides advice and support to the Cultural and Creative Industries sector to promote the creative sector of Girona and its surroundings and promote cultural participation in the different artistic fields.

Policies and programs to support creative and cultural industries

Existing support policies and programs in Catalonia for the cultural and creative sector and from several institutions, departments and levels of intervention are divided in economic measures, non-economic and hybrid measures.

Economic measures:

Funding:

ICEC, Catalan Institute for Cultural Companies (Catalan Department of Culture):

- **Grants for Consulting**: The Development and Business Transformation Area of the ICEC through the Business Development Service (SDE) Cultural consultancy, a line of grants for the realization of consultancies aimed at the business fabric and entities of the Catalan cultural and creative sector.

- **Grants for developing cultural content in digital formats:**
    - Digital content events
    - Development of digital resources for literature
    - Projects that will Introduce Catalan in several technological products
    - Release of podcasts in Catalan or Occitan
    - Internationalization of videogames enterprises
    - Acquisition of software to develop audiences

Other public bodies:

- **Grants for the cost of the guarantees necessary to obtain loans** for the implementation of new projects or activities of the cultural industries by the **Subdirectorate General for the Promotion of Cultural Industries** from the Spanish Ministry of Culture.

- **Grants for the modernization and innovation of cultural and creative industries** through digital and technological projects by the Ministry of Culture and Sports in the following sectors:
    - Architecture
    - Audiovisual arts and cinema
    - Performing arts

    - Plastic and visual arts
    - Interactive arts
    - Design
    - Fashion
    - Edition
    - Cultural management
    - Music and dance
    - New multimedia creative genres and new media
    - Cultural heritage and cultural tourism
    - Advertising
    - Radio and television

- **Grants for R&D projects** developed by companies and aimed at the creation and significant improvement of production processes, products, or services. **The Ministry of Innovation and Science** gives them to cover staff costs; instrumental and material costs; costs of contractual research, acquired know-how and patents, consultancy, and equivalent services; additional overhead and other project expenses. Expenditure arising from the auditor's report and project management and coordination expenses are also eligible.

- **Financial instruments: Repayable contributions and participative loans** from ICEC (Catalan Institute for Cultural Companies) by the Catalan Department of Culture. The repayable contributions are an innovative commitment that consists of the contribution of financial aid, in the form of co-financing, that allow the company to have liquidity to start a cultural project and that are facilitated in the double modality of subsidy plus loan. The return of the grant is made within a period adjusted to the financial needs of the project and considering the success or failure of the proposal. The participative loans are targeted to cultural start-ups with a digital business model that aims to offer them support in the early stages of their business projects.

Non-economic measures:

- **Training and advising:**

- **Training and services to improve the competitiveness and innovation of Catalan companies and cultural entities** (ICEC through their Business Development Area).
- **Creamedia program** the offers support and training services to new companies and, at the same time, strengthens Barcelona as a pole of creative talent. Is an initiative of Barcelona Activa, the Business Development Service of the ICEC and the Fundació Catalunya Cultura.
- **Mentor sessions for videogames companies.** Individual advisory sessions by experts in subjects such as law, financing, strategy, marketing, production, publication, distribution, monetization, and human resources. Program promoted by the ICEC through Catalan Arts and the Area of Business Development, and managed and executed by GameBCN, a videogame firm.

Labour Department of the Catalan Government:

- **The Cooperative Athenaeum Network**, supported by the **Labour Department of the Catalan Government**, is distributed throughout the territory, offer various services to promote projects, with the aim of being a reference space for innovation and support for the creation of cooperatives and social economy initiatives. The entities, both public and private, that are part of these athenaeums are local entities, cooperative companies or labour societies, associations, and foundations with experience in the field of the project and with the capacity to carry it out, or groups without legal personality.

Hybrid measures:

- **Plan to promote entrepreneurship** by the Catalan Institute for Cultural Companies in the context of post-pandemic economic recovery in the cultural sector. The plan consists of a line of grants, a training plan, lines of funding (in collaboration with ICF - Catalan Finance Institute), a program to encourage entrepreneurship at the university level, and the deployment of a space of cultural advice.

Research sites and universities with innovation projects linked to CCSIs

Technological and scientific advances in the industrial and business sectors (also within the CCSIs) are centralized by Eurecat, the major Technology Centre of Catalonia. It is the main agent in public and private cooperation in research and innovation and in the implementation of the technological strategy of Catalonia (RIS3CAT). It provides the industrial and business sector with differential technology and advanced expertise. It was founded to become a referent in public and private cooperation in the field of research and innovation, being one of the main actors in the implementation of the technological strategy of Catalonia (RIS3CAT). Mostly private it is composed of representatives of leading companies and institutions in different strategic sectors of the Catalan economy. It offers solutions to their innovation needs and boosts their competitiveness. Eurecat has R&D teams specialized in image processing and 3D audio, social media and computational social science, trustful data-centric ecosystems, Big Data analytics, evaluation of cognitive and emotional impact, interactive technologies and strategies for the innovation and economic growth of the cultural and creative industries.

Through the collaboration between companies and entities from the cultural and creative industries and the Catalan Research, Development, and Innovation (R&D&I) system there are initiatives like **RIS3CAT Media Community**, coordinated by Eurecat, the Catalan Technology Center.

A RIS3CAT Community is a public-private sector association formed by different entities (companies, technology centers, universities, and other agents of the R&D system), with the aim of developing transformative technological projects with a high impact on the Catalan economy. All those companies and agents of the Catalan R&D and innovation system can be part of a RIS3CAT Community within the axes of the RIS3CAT strategy, in the following leading sectoral areas:

- Food industry
- Chemistry, energy, and resources industries
- Sustainable mobility industries
- Design industry
- Cultural and experience-based industries
- Health and life sciences industries
- Industrial systems

The **RIS3CAT Media Community** works to promote innovation based on the intersection between science, technology, creativity, and society. The RIS3CAT Media Community, which integrates 34 companies and R&D&I agents, develops eight technological innovation projects that add up to an investment of 13.6 million euros and cover from new experiences in museums and innovations in learning processes to new solutions in the field of streaming music and content recommendation. They also include immersive and interactive experiences and the development of new formats in entrepreneurship and business incubation.

In terms of advanced technology as Artificial intelligence, Supercomputing, Robotics, Photonics, or smart connectivity there are also projects at several research institutions and universities in Catalonia with specific approaches as the **Digital Innovative Hub** (DIH4CAT). It is a project led by the Catalan Government through the Department of Digital Policies and Public Administration and the Department of Business and Knowledge that works as a dynamic community integrating agents with complementary capacities such as public administrations and Digital Innovation Nodes (DIHs) specialized in advanced technologies.

There are also creative approaches that connects academic fields with the different actors in interdisciplinarity to explore and develop intersections between art, science, and technology to boost the digital transformation of society. The best example is **the Art, Science and Technology Hub (Hac Te)**. The hub is a cross-sector initiative under a joint-governance model, which has the support of institutions such as Barcelona City Council, the Government of Catalonia, the Barcelona Chamber of Commerce; research institutes like Barcelona Institute of Science and Technology; universities like Polytechnical University of Catalonia, Open University of Catalonia, and high-tech facilities like Barcelona Supercomputing Center.

Urban innovation has been in the scope of action within the Smart Cities Movement and **Bit habitat Foundation** funded by Barcelona City Council is the main actor. It promotes urban innovation through grants, innovation networks etc. to respond to the social, economic, technological, and environmental challenges facing the city, so that it becomes healthier, sustainable, competitive, and equitable, while improving the quality of life of the people who inhabit it.

Regarding audio-visual, videogames and digital content, there is a new infrastructure that has just been presented and that will be constructed with the arrival of Next Generation funds: the **Catalunya Media City**. It will become a centre of research, innovation, and production for the audio-visual, video game and digital content sectors. Furthermore, it will integrate production facilities for the national and international market, cutting-edge technology business technology and will offer advanced training.

Innovation ecosystem

The medium for innovation to emerge in the Catalan creative and cultural industries are characterized by the coexistence of the public and private sector. In some initiatives they collaborate and in others they coexist. Most of these incubators are in Barcelona, as it is the capital of Catalonia.

The business fabric of the creative industries is very rich in Barcelona. The city concentrates 51.1% of all jobs in the sector in Catalonia and represents 13.4% of all jobs in Barcelona. In the **22@ district**, located at Poblenou neighborhood, there are more than a hundred small and medium-sized businesses with creative components. On a little over 200 hectares of what used to be industrial sites there are now more than 1,500 companies linked to the media, IT, energy, design, and scientific research. Poblenou's industrial land was the setting for Barcelona's industrialization and these days it is home to **a knowledge cluster**.

Barcelona’s City Council economic development agency incubator’s network is the main public agent offering business advice and a wide range of services to boost start-ups targeted to creative and cultural start-ups among other sectors:

- **The innoBAdora**, Incubation Community, is a space for collaborative growth located at InnoBA, the Socioeconomic Innovation Centre of Barcelona. Funded and supported by Barcelona City Council's economic development agency Barcelona Activa. It hosts socio-economic innovation and Social and Solidarity Economy projects, facilitating and promoting the generation of synergies between people, groups, and companies through the co-production of activities and training. It welcomes socio-economic initiatives committed to the social and solidarity economy that seek to generate positive social and environmental impact, are dedicated to participatory governance models, and want to grow in a collaborative work environment.

- **Glòries incubator** is Barcelona Activa's first, and largest incubator is a facility for 50 newly created companies (less than five years old), equipped with cutting-edge infrastructures and services.
- **Almogàvers incubator** is a facility managed in collaboration with universities (UOC, Universitat Pompeu Fabra, ELISAVA) that select the entrepreneurial initiatives and offer support. A dynamic and innovative environment which also benefits from Barcelona Activa's business advice services.
- **MediaTIC incubator** offering mentoring, connections to the ecosystem and workspaces for technology-based startups.
- **Palo Alto Creative Business Incubator** focused on accompanying entrepreneurial initiatives in entering the market, especially projects related to the audiovisual sector and new sound and light technologies. A space for public-private partnerships and a space for the city's creative entrepreneurship.
- **Coworking La Clota** supporting entrepreneurial initiatives that carry out an economic activity in one of the Horta-Guinardó Economic Development Plan’s priority areas: care, sports and leisure, the agri-food sector, technology and art and culture, among others.
- **The Technology Business Center** is an innovation environment located in the Nou Barris district that hosts technology-based companies focused on innovation, particularly in the field of engineering. It aims to offer an environment that promotes and encourages responsible business growth.

Other incubators located in Barcelona:

- **Bcn Fab Labs** it is a private incubator inside the Institute for Advanced Architecture of Catalonia in Barcelona (IAAC). Member of the world-wide fab labs network and digital fabrication facilities to prototype, fabricate and test ideas in the real world as research, education, and innovation. Boosting accelerator programs in different fields as the Accelerator for local food technology innovation.
- **Barcelona Tech City** is a private non-profit association that supports and catalyzes Barcelona’s digital and technological ecosystem.
- **Ship2b Foundation** funded by a private foundation to create an Impact ecosystem, formed by startups, companies, investors and organizations that respond to social and environmental challenges.

Incubators located outside Barcelona:

Coworking and Creative Business Incubator (Salt, Girona) founded by Girona City Council and funded by Girona Provincial Council and European Funds for Regional Development.

FLANDERS

In a study by the Flanders DC Knowledge Centre at the Antwerp Management School (2010), creative industries in Flanders have been defined as the following sectors:

1. Audiovisual industry
2. Architecture
3. Communication
4. PR & advertising
5. Cultural heritage
6. Design
7. Fashion
8. Games
9. New media
10. Music
11. Performing arts
12. Printed & digital media and visual arts

The sector provides work to 187.196 full time equivalents (6,62% of total employment), has a turnover of € 75,8 billion (11,88% of the total turnover) and a gross value added of €14,1 billion (5,89% of the total gross value added in Flanders). Communications, pr and advertising, design and architecture showed the biggest increase in growth of employment and gross value added between 2009-2019.

In nominal terms, turnover increased most in design (+€11.92 billion), followed by fashion (+€6.4 billion) and advertising, communication & PR (+€1.7 billion). Digital and print media was the only sector to experience a decline (by – €269 million).

Flanders is both a linguistic community (competent in mainly cultural matters) and an economic region (competent in mainly economic matters) within the Belgian state and has significant autonomy. Flanders is governed by the Flemish Government, with legislative powers for most matters (i.e., economy & innovation, education, mobility, public works, environment, health). Residual powers rest with the federal layer, the Belgian Parliament and Government, or on the European layer (European Union).

In Belgium, **almost 80% of the total public R&D&I** support is managed by the Communities and Regions.

R+D+I policies

The Department of Economy, Science and Innovation is responsible for preparing, monitoring, evaluating, and reporting on public policy in the field of **enterprise, science, and innovation**. From these evaluations and reports, the Department creates the science, technology and innovation policy that aims to create sustainable economic growth by facilitating entrepreneurship, stimulating innovation, and encouraging knowledge creation.

Four agencies are tasked with the implementation of the STI policy:

- **FWO** (Fonds voor Wetenschappelijk Onderzoek Vlaanderen /Research Foundation Flanders) which supports fundamental and strategic research and cooperation at Flemish universities.
- **VLAIO** (Vlaanderen Agentschap Innoveren en Ondernemen /Flanders Innovation and Entrepreneurship) is the one-stop-shop for companies, managing all the economic and innovative support needed by new or growing companies located or active in the Flemish Region.
- **PMV** (Participatie Maatschappij Vlaanderen/Flemish Investment Company) provides capital, loans and guarantees for Flemish businesses.

Government authorities tasked to suport CCSIs

Flanders is both a linguistic community (competent in mainly cultural matters) and an economic region (competent in mainly economic matters) within the Belgian state and has significant autonomy. Flanders has legislative powers for most matters (i.e., economy & innovation, education, mobility, public works, nature and the environment, health). The federal layer has residual powers.

Cultural and Creative support is mainly provided, at the regional level, by the **Flemish Ministry of Culture, Youth and Media** and by **the Enterprise & Innovation department**.

Flemish Ministry of Culture, Youth and Media

The Ministry oversees the Flemish Cultural policy that includes several fields of intervention related with cultural and creative industries like digital culture, culture and economy, film policy, international cultural policy, arts or cultural heritage.

The Arts Decree is the main legislative framework in Flanders and Brussels for supporting the professional arts (except for audiovisual & literature). This includes architects and designers as well in different disciplines, who can apply for funding non-commercial, artistically oriented activities. Also included are theoreticians and organizations that reflect on architecture and design. Museums and archives dealing with architectural, or design heritage can receive funding through the Cultural Heritage Decree.

The Arts Decree also arranges the support for **Flanders Arts Institute** that is an interface organization and expertise center for the arts from Flanders and Brussels. It is an independent center of expertise for professionals of the performing arts, visual arts and (classical) music in Flanders. Flanders Arts Institute shares expertise and data with artists and music organizations. It also supports professionals in classical music through the organization of international promotion and networking opportunities. Through research, they produce evidence and intelligence that supports art organizations to improve their practice. Their research helps to improve art and culture policy. Since 2019, **VI.BE** (formerly known as Poppunt) provide similar services for professionals in folk, jazz, pop, and rock music, next to support for amateur pop and rock musicians and DJs. Likewise, there is **VAI**, Flanders Architecture Institute as the main centre for information about architecture from Flanders and Brussels. It creates a platform for everyone who wants to make, share, and experience architecture.

Provincial and local authorities have a large degree of autonomy over the competences they each exert within their territories. They can devise policy instruments and allocate resources to these. Local authorities in the Flemish Region can, for example, set up their own support schemes for local cultural and leisure time initiatives. Since 2018, provincial authorities have been divested of most of their cultural competences (such as providing multi-year funding for cultural organizations). The culture budgets of the provinces have been divided among the Flemish government and the local authorities.

<u>Innovation&Enterprise Agency</u>

Enterprises in the CCSI can also apply for support schemes in the policy field of Economy, Science, and Innovation (which reside with the Regions, not the Communities). The government agency **Flanders Innovation & Entrepreneurship** (VLAIO) helps companies and research centers to realize their research and development projects by providing funding, advice, and a network of potential partners in Flanders and abroad. Flanders Investment and Trade (FIT) is another government agency — part of the separate Flemish policy field of Foreign Affairs — offering schemes for international entrepreneurial activities, including the CCSI. As an investment firm of the Flemish government, PMV provides financing solutions for entrepreneurs in the CCSI and other industries.

The Flemish government supports **Flanders District of Creativity** as a point of contact for entrepreneurs in the CCSI and CCS in Flanders, offering expertise, coaching, promotion, and network development.

People working in the CCS and CCSI can also take advice from Cultuurloket (Culture Counter) on business related and juridical questions and funded by the Culture, Youth and Media policy. Its mission is to promote entrepreneurship and professionalization in the Flemish cultural sector and facilitate access to additional funding to stimulate and support sustainable entrepreneurship. Another government funded organization is the **Social Innovation Factory**, which promotes, guides, and supports social and societal innovative entrepreneurial (including cultural) projects.

Policies and programs to support creative and cultural industries

Public policies and programs to support cultural and creative industries are provided by several departments of the Flemish Government like the Flemish Cultural, Youth and Media Department, Flemish Enterprise & Innovation Department, Flemish Agency for Investment and Trading or the Flemish Department for Economy, Science, and Innovation. Above we have listed the main non-economic, economic and hybrid measures in Flanders.

Economic measures:

- **Tax shelter**: On the Federal level, there is a tax shelter scheme for audiovisual & performing arts productions, as well as a tax shelter scheme for start-ups. It is a way to obtain additional resources more easily from the market, in addition to government subsidies.

- **Funding**:
    - **Flemish Department of Culture, Youth and Media** programs to support entrepreneurship in the cultural and creative sectors has a

set of instruments that work in addition to subsidies, to arrive at an ideal financial mix. **A culture credit** is a credit or loan up to 100,000 euros for actors active in the cultural sector. The interest on a cultural credit varies from 0% to 3% and the credits are open to both legal entities and natural persons. Anyone wishing to claim culture credit must be able to demonstrate that he/she cannot obtain a bank loan for the same project. Moreover, it is not mandatory to provide a guarantee. **An interest-free art loan** of 500 to a maximum of 7,000 euros. With this loan you can purchase a work of art by an artist who lives and works in Flanders or Brussels. I

- **The Flanders Audiovisual Fund** (VAF) manages three funding bodies for co-financing respectively film productions (Film Fund), television series (Media Fund), and video games (Game Fund) in Flanders and Brussels.
- **Screen Flanders** is a support measure for (Belgian and foreign) audiovisual productions that spend budget in the Flemish Region. Their budget is supplied by the government agency Flanders Innovation & Entrepreneurship (VLAIO).

- **Subsidies for entrepreneurs** at Flanders Innovation and Entrepreneurship agent VLAIO by the Flemish Ministry of Economy, Science, and Innovation offering a wide range of subsidies for entrepreneurs to support them in training opportunities, advice, investments, and research & development.

- **Innovative Partner Projects** from the Flemish Ministry of Culture that allows various cultural organizations to enter collaborations with organizations from other sectors. The project grant runs for a maximum of three years and amounts to a maximum of €80,000 per project.

- As an investment firm of the Flemish government, **PMV** provides **financing solutions for entrepreneurs** in the Cultural and Creative Industries and other industries. It can be a potential financing partner for promising companies in the cultural and creative sectors (CCS). A company can contact PMV at any stage: start-ups, growers or scale-ups, or companies with a strong buy & build strategy.

Non-economic:

- **Training and advice opportunities:**
  - **Flanders DC.** Point of contact of the Flemish Government for entrepreneurs in the cultural and creative industries offering expertise, coaching, promotion, and network development.
  - **Cultuurloket.** Business and juridical support for the culture sector offered by the Flemish Government.
  - **Social Innovation Factory**, which promotes, guides, and supports social and societal innovative entrepreneurial (including cultural) projects.
  - **Flanders Chambers of Commerce Alliance** (VOKA) in collaboration with Flemish Agency for Innovation and Entrepreneurship (VLAIO) different routes to support entrepreneurship to StandUp, StartUp and ScaleUp with coaching, network, and meeting with potential investors.

- **Collaboration and support. Several municipalities' areas as:**
  - **Antwerp. powered by creatives.** Platform for the creative economy in the city and province of Antwerp that promotes collaboration between the creative industry and other sectors.
  - **Kortrijk Designregio** helping companies, organizations, and cities, to become more innovative and creative by offering several services.
  - **Leuven Mindgate** is an organization which facilitates collaboration and innovation between all these actors within the Leuven Innovation Region**.** In the crossroads of Health, High Tech and Creativity. For example, offering a database in which creative entrepreneurs, companies and individuals can search for the best match for their needs in Leuven.
  - **Ministry of Makers** is the design platform in Ghent and East Flanders connecting the professional creative entrepreneurs with other sectors.

Hybrid measures:

- **The Flanders Audiovisual Fund** (VAF) supplies grants, advice and workshops for screenwriters, directors, animators, game developers, and other (young) professionals in the audiovisual industry. It also subsidizes distributors, art house cinemas, film education, film festivals, film magazines, and other organizations, collaborations or projects that enhance film culture in Flanders.
- Enterprises in the cultural and creative industries can also apply for support at the government agency **Flanders Innovation & Entrepreneurship** (VLAIO) that helps companies and research centers to realize their research and development projects by providing funding, advice, and a network of potential partners in Flanders and abroad.
- **Flanders Investment and Trade** (FIT) is another government agency — part of the separate Flemish policy field of Foreign Affairs — offering schemes for international entrepreneurial activities, including the creative and cultural industries.

Research and innovation linked to CCSIs

Flanders is home to research groups, linked to Gent and Leuven universities, that focus on **network technology and innovation** in applications as diverse as healthcare, transport, logistics, **media,** energy, and smart systems. Here are several of these groups:

- **UGent Data Science Lab**. Boasts top expertise in machine learning, data mining, data modeling and many other aspects of big data and networking along the entire data value chain.
- **IDLAB (UGent)**. The Internet Technology and Data Science Lab focuses on advancements in state-of-the-art, high-speed circuit design for optical and wireless communication, electromagnetics and fiberoptics.
- **IBCN (UGent)**. Internet-based Communication Networks and Services research group take a multidisciplinary approach to studying network modeling, design and evaluation, mobile & wireless networking, autonomic computing & networking and more.
- **WAVES (UGent)**. The Wireless, Acoustics, Environment & Expert Systems group performs cutting-edge research in wireless networking, smart cities, sensing, factories of the future and more.

- **STADIUS (KU Leuven)**. Contributes to the development of improved digital systems using advanced modeling techniques.

Imec, Flanders' strategic research center for digital and nanotech, is dedicated to innovating across a wide range of ICT-centered industries relevant to network modeling, innovation, and development. It supports entrepreneurship by offering training, financing, state-of-the-art facilities, and networking opportunities related to wireless communication and network development; CMOS development and scaling; the Internet of Things; data processing and encryption and more.

VITO is an independent Flemish research organization in the area of cleantech and sustainable development. They are actively involved in doing research towards sustainable materials and circular fashion.

Several university colleges have projects/incubators or offer training related to **innovation that are linked to the creative and cultural industries**:

- **Creative & Innovative Business Program at Thomas More University Academy** supports SMEs and social profit organizations with practical insights, guidelines, business models, methodologies, and application demonstrations to proof their future competitiveness.
- **Business design & innovation at Antwerp Management School** develops knowledge and tools in the field of product and service development, design, and design management. They help companies to align their innovation with relevant technological, economic, and social trends.

There are not many dedicated CCSI clusters in Flanders. One example is the **Smart Hub Flemish Brabant that concentrates five clusters or Smart Hubs.** It is an initiative of the Flemish Brabant policy, business, and academic world. At the **Smart Hub Creativity**, the audiovisual sector is strongly represented with **the media cluster** in and around Vilvoorde and **the communication and new media cluster** in Leuven. Furthermore, there is also the **Smart Hub Food** that creates a breeding ground for further innovation in the vicinity of and together with many (inter)national food companies and renowned knowledge institutions by purposefully bringing knowledge and entrepreneurship together.

Since 2013, the center gathers a community of social innovators who support and coach other aspiring entrepreneurs with an innovative social idea through the development process by exchanging experiences and knowledge. Through The Social Innovation Factory, entrepreneurs can also request a feasibility study and (co-) financing by the regional government.

Innovation ecosystem

There are **business incubators** in the Flanders region open to all kind of fields within innovative start-ups but those focused on Information and Communications technology, digital technology, or game technology stand out providing them with affordable office space, administrative services and even development tools. **There is a coexistence between the public and private initiatives**, becoming strategic partners in some cases:

- **iCUBES** located at Zwijnaarde is full-service facility for innovative Information and Communication's Technology companies that is backed by Imec (Research Center for nano and digital technology), provides professional reception services as well as a ready-to-use IT and telecom infrastructure.
- **Start-up Garage Ghent**. Imec's (Research Center for nano and digital technology) own a co-working space at Ghent that follows in the footsteps of similar initiatives by Google, Apple, and Microsoft. It's an appealing and vibrant spot where start-ups meet, exchange knowledge, and share networks with other tech entrepreneurs.
- **Flanders Smart Hub**. A network of tech clusters (including food and creativity hubs) that offers incubation to start-ups and established companies in many fields of digital technologies.
- **Darwin Incubator**. Provides office space, laboratory infrastructure and expertise to entrepreneurs offering innovative solutions in information systems, tech sciences and more.
- **LRM Group incubators.** Company group that invests in innovative companies, start-ups and knowledge infrastructure strengthen knowledge-building and stop the 'brain-drain' in Limburg.
    - **Corda INCubator** located on the Corda Campus, a pioneering international campus focusing on technology, high-tech, ICT and media.
    - **IncubaThor** is the incubator for spin-off companies and starters looking for a connection with the science business park and Energyville.

- Greenville is the incubator for companies working on new materials, mobility, water and new business models for cleantech and circular economy.
  - **C-mine Crib** is the incubator for start-ups in creative, innovative technology. This service center supports young creative companies by offering guidance, coaching and accommodation.
  - **Agropolis** is the business park and the incubator for companies in innovative agriculture.

- **Roularta Mediatech** in Roeselare. Business acceleration program for start-up companies active in creative media and digital technology.

- **Dunden** located in Antwerp provides affordable office space for innovative start-ups. It focuses on innovative start-ups that develop SaaS (software as a service), but also on scale-ups with a focus on healthcare, fundraising, B2B innovation or social impact. It is in the city center near Antwerp’s main incubators and other start-up initiatives. In addition to the BlueHealth Innovation Center and a base of the imec research center for nano- and digital technology, StartupVillage is also home to **CoFoundry** – an incubator of the Cronos Groups that helps start-ups with a minimum viable product find growth financing. What’s more, accelerator **Netwerk Ondernemen** offers promising growth companies networking opportunities and access to specific expertise through its extensive network of company leaders.
- **DAE Studios** in Kortrijk is a **game-technology accelerator**. It is a spin off from the Howest University of Applied Sciences initiated by the program Digital Arts & Entertainment. Their focus is to incubate and accelerate start-ups in the applied and entertainment game development business with the help of their existing community, extensive network, and stakeholders.
- **Startit @Kbc** is the largest ecosystem in Belgium with a network of hundreds of start-ups, scale-ups, mentors, experts. Accelerator programs or a global Accelerator Network and coworking spaces are some of the services that they provide.
- **Birdhouse** in Antwerp, Ghent and Brussels it is an accelerator program in order to grow from start-up to scale-up, and gives opportunities to funding and networking.
- **O.666** at Oostende breeding ground and lab for individual makers, citizen initiatives, social, ecological and arts organizations.

- **DE WINKELHAAK / HOUSE OF C.** at Antwerp is an incubator for creative entrepreneurs and offers co-working tailored to start-ups and ambitious growth companies. It hosts a wide range of cultural and creative firms within design, architecture, fashion, circular economy among others.

Concerning social innovation, **Sociale Innovatie Fabrik** is the main accelerator agent as it is a networking organization jointly established and co-financed by civil society organizations, social enterprises, private companies, and the Flemish government. The network enables its stakeholders to address social challenges in an entrepreneurial way by incubating innovative societal solutions in Brussels and Flanders.

NORTH RHINE-WESTPHALIA

Following the definition of the Federal government and the Länder, the Cultural and Creative Sectors and Industries officially comprises 11 submarkets:

- Music economy
- Book market
- Art market
- Film industry
- Broadcasting industry
- Performing arts sector
- Design industry (including fashion)
- Architecture market
- Press market
- Advertising market
- Software and games industry

In North Rhine-Westphalia the companies generate sales of 39.8 billion euros and thus contribute to almost a quarter of the overall turnover generated by the creative sector at federal level as of the last evaluation before the pandemic in 2018. At 752,100 euros, turnover per company is well above the federal average (654,300 euros). Additionally, **the cultural and creative industries employ roughly 300,000 people and thus 3.8 percent of the total workforce in North Rhine-Westphalia**.

With a **gross value added of roughly 20.5 billion euros**, the cultural and creative industries in North Rhine-Westphalia contribute **22.7 percent of the industry's gross value added at federal level,** pointing to the strength and economic importance of the sector. The **advertising industry, design, press and the book market are leading the North Rhine-Westphalian Cultural and Creative Sectors and Industries** in terms of turnovers. Combined, these submarkets account for almost two thirds of the industry's total turnover. The submarkets software/games, advertising, design, and press are central employers providing almost 70 percent of the working population in the North Rhine-Westphalia's cultural and creative industries. Great significance is attributed to the software/games industry, performing arts and architecture, which achieved dynamic growth in turnover and employment.

A cross-sectoral comparison underlines the efficiency and competitiveness of North Rhine-Westphalia's Cultural and Creative Sectors and Industries. **Measured by employment, the Cultural and Creative Sectors Industries rank second after the metal industry**. Furthermore, with significant contributions in gross value-added, the cultural and creative industries achieve figures corresponding roughly to those of the metal industry (3.7 percent) or mechanical engineering (3.3 percent).

One of the key factors for an assessment of **competencies at the regional level** is the consideration of economic and (European) social policy priorities.

The competencies of the region are reflected in these 8 lead markets as the focus of the North-Rhin-Westphalia Operational Plan (2014-2021):

- Mechanical and plant engineering/production technology
- New materials
- Mobility and logistics
- Information and communications industry
- Energy and environmental economy
- **Media and creative industries**
- Health
- Lifesciences

Government authorities tasked to support CCSIs

In Germany, as a federal state, governance is organized on three levels according to federal, state/regional and municipal level:

Federal Level

To increase the industry's competitiveness, the federal government launched **the Cultural and Creative Industries Initiative**. The initiative is coordinated by **the Federal Ministry for Economic Affairs and Climate Protection** and **the Minister of State for Culture and Media**.

The Federal Foreign Office, the Federal Ministry of Justice, the Federal Ministry of Finance, the Federal Ministry of Labor and Social Affairs and the Federal Ministry of Education and Research are also involved.

The aim of the initiative is to strengthen the competitiveness of the cultural and creative industries and to further exploit the job potential. In addition, the employment opportunities of innovative small cultural enterprises and freelance artists are to be improved. The aim of the German Government’s **Centre of Excellence for the Cultural and Creative Industries** is to identify opportunities for cooperation and to make synergy effects in the interaction of the cultural and creative industries with other sectors and areas more usable.

State and Regional Level

The Ministry of Economic Affairs, Innovation, Digitalization and Energy (MWIDE) of North-Rhin-Westphalia is the one supporting Creative Industries in the region through the specialized institution CREATIVE.NRW. Its main task is to work as a competence center and consultancy for freelancers, companies, institutions, and municipalities. CREATIVE.NRW is co-financed by the European Regional Development Fund (EFRE) and the state NRW in the period 2009-2022.

The Ministry for Culture and Science (MKW) is the agent designated for supporting Culture, Arts, Music, and Literature through the institution Kultursekretariat NRW (NRW Cultural Secretariat). Their main tasks are to initiate, promote and organize a wide range of programs, projects, and events in the fields of theater, music, visual arts, literature, and dance - often cross-disciplinary and experimental putting the focus on international and digital culture as well as the topics of diversity and interculture. In a cooperative, dialogic, and participatory way, NRWKS connects actors and multipliers from all cultural fields and provides impulses in cultural-political discourses. Members of the NRWKS are the theater and orchestra bearing cities and a regional association in North Rhine-Westphalia.

The ten cultural regions of North Rhine-Westphalia are supported by **the Ministry of Culture and Science through the Regional Culture Program NRW.** For over 20 years, the program has set itself the goal of supporting regional networking in the cultural sector to sustainably strengthen cultural development in the ten cultural regions of North Rhine-Westphalia: Bergisches Land, Hellweg, Münsterland, Lower Rhine, East Westphalia-Lippe, Aachen Region, Rhine Region, Ruhr Region, Sauerland and South Westphalia.

The State Chancellery of North Rhine-Westphalia supports Media, Films and Games through several institutions, like:

- **Film- und Medienstiftung NRW** (**Film and Media Foundation**). Its goal is to strengthen both the film and media culture and the film and media industry in North Rhine-Westphalia. It supports films for cinema and television at all stages of production and distribution as well as the development of innovative audiovisual content and formats for other forms of exploitation.

- **Landesanstalt für Medien (State Institute for Media)** stands for the protection of human dignity, minors, media users and private media plurality in the German Federal state of North Rhine-Westphalia. By regulating and supervising existing media services they ensure that these legally protected interests are not violated. At the same time, they promote journalism in North Rhine-Westphalia and teach people to use media fairly and autonomously. Especially with the **Journalismus Lab** in which the main objective is to create experimental spaces for media innovations - for media start-ups or teams from media companies.

- **MediennetzwerkNRW (Media Network)** supports digital media creators and companies on behalf of the state government of North Rhine-Westphalia by establishing professional, cross-industry, international, personal, and digital networks. It also supports the growth of innovative founders and creative companies with a focus on games, web video, XR/AR/VR, online audio and mobile in North Rhine-Westphalia centrally and together with the location partners, to make North Rhine-Westphalia visible as a media location.

- **Mediengründerzentrum (Media Founders Centre)**. Their mission is to turn young founders into successful entrepreneurs by strengthen the diversity of creative media companies and business models. The Media Founders Centre promotes modern entrepreneurship in the media sector and secures the future of one of the leading media locations in Germany.

At the regional level, there are various (partially) public institutions that cover different fields of support for Creative and Cultural industries in the region of North-Rhin-Westphalia:

- **Ecce - european centre for creative economy** has been bringing together actors and institutions from the fields of culture, art, business, and urban development since 2011 to promote the transformation of the Ruhr area into a creative and future location and to make it visible nationally and throughout Europe. Due to the sustainability resolution of the state of North Rhine-Westphalia (NRW) and the Regionalverband Ruhr (RVR), Ecce was commissioned to develop creative and artistic industries and potential in the Ruhr Metropolis in close cooperation with the municipalities.
- **Regionalverband Ruhr** (**Regional Federation Ruhr**) in terms of culture promotes the further development of regional culture in a variety of ways for example, through funding pots for regional culture and intercultural projects.
- **BMR - Business Metropole Ruhr** specially with their project **CREATIVE INNOVATION RUHR**. The project focuses on the nationwide recruitment of (potential) founders from the culture and creative industries, the matching of these with SMEs and the initiation of new cross-sector cooperations to promote innovation and the digitization competence of the regional economy in the Ruhr Metropolis.
- **Kulturbüro OWL**. Cultural Office of the Region Ostwestfalen-Lippe that gives support to Cultural projects.
- **Kultursekretariat NRW Gütersloh** (NRW Cultural Secretariat). Together with its member cities and in close cooperation with the state of North Rhine-Westphalia, the secretariat initiates and promotes cultural projects in all sectors.

Communal Level

There are two regional associations in North Rhine-Westphalia that are considered part of local self-government. These are for the Rhineland part of the state, the **Landschaftsverband Rheinland** (LVR), based in Cologne, for the Westphalia-Lippe region, the **Landschaftsverband Westfalen-Lippe** (LWL), based in Muenster.

The regional associations have no territorial sovereignty, in terms of culture they are mainly taking care of cultural heritage and historic preservation but also run events on creative crowdfunding.

On top of that North Rhine-Westphalia is divided into 427 municipalities that run programs for Cultural and Creative Sectors and Industries on a local level.

Policies and programs to support Cultural and Creative Sectors Industries.

Concerning public programs and policies intended to Cultural and Creative Sectors and Industries there are economic, non-economic and hybrid measures across federal, statal and regional levels across different policy fields. We have listed the main ones below (inter alia):

Economic measures:

Funding:

- **The Ministry of Economic Affairs, Innovation, Digitalization and Energy** of the state of North Rhine-Westphalia has a department for Creative Economy. Every year they fund projects as important light-house projects that support innovation in various subsectors of Cultural and Creative Sectors and Cultural Industries. In the Startup Department they issued for example a **START-UP FUNDING NRW** (not specific to CCSIs): One year of support for your start-up: advice, contacts, and a grant of 1,000 euros per month for a maximum of one year.

- **The Ministry of Culture and Science of the state of North Rhine-Westpahlia** offers a wide variety of funding programs. Some programs are fostering innovative practices and output. Especially during the pandemic, a set of measures stimulated the innovation potentials, like a **scholarship program** as part of the large-scale NRW strengthening package "Art and Culture" to deal with the direct and indirect consequences of the Corona crisis in the field of culture. They were implemented in August 2020 and spent a total sum of 195 million euros from which 29,500 artists have benefited from these funds.

- **The Film and Media Foundation** offers funding for feature film productions, games and interactive content and the production of TV movies and series as well as the development of innovative serial formats (independent of platforms).

- **European Regional Development Fund (ERDF) and the state of North Rhine-Westphalia**. To support the foundation of start-ups within universities, twice a year, founders can apply for financial support from the state of North Rhine-Westphalia. Each start-up project can now receive up to 320,000 euros.

- **Regional Culture Policy**: Regional Municipalities as well as associations, companies or individuals who want to enrich or further qualify the art and culture on offer in their cultural region with a project can apply for funding. As a rule, a state subsidy of up to a maximum of 50 percent can be applied for. Networking with other actors in the region is an important funding criterion.

- Funding is also available at universities like the **RWTH Incubation Program**, a three-month Incubation Program. It is a holistic early-stage program to support deep-tech founders in Europe. The program supports prototype development and helps achieve product-market fit scale and secure additional (early) funding.

Awards:

- **The Cultural and Creative Industries Initiative on a Federal level** has established a competition in which entrepreneurs are awarded the title **of cultural and creative pioneer in Germany**. The title is bestowed on successful participants who want to launch a business based on a special creative or cultural idea.
- **The Ministry for Economic Affairs, Innovation, Digitization and Energy of the State of North Rhine-Westphalia** promotes the FOUNDER AWARD NRW: one of the most highly endowed competitions in Germany for young companies, company successors and freelancers from the areas of trade, industry, and services (60.000€).
- An award dedicated to innovation at the intersection between tourism and CCSI is the Urbanana Award where 5 winners receive 4,000 € yearly issued by TourismusNRW in cooperation with CREATIVE.NRW.

Non-economic measures:

- **Mentoring:**
  - *Sheroes:* The Media Founders Centre offers a 6-month program to specifically promote female founders in the media and games industry in North Rhine-Westphalia. A seminar program, coaching, mentoring and intensive networking.

- **Advising: The Ministry for Economic Affairs, Innovation, Digitization and Energy of the State of North Rhine-Westphalia**
  - **STARTERCENTER NRW:** To ensure that the first steps on the way to self-employment are successful, the Startercenter NRW offers start-up help for people setting up their own business: they advise and provide information at 75 locations across the state on founding and company development.
  - **Scale-up NRW**: It helps the participating start-ups to reach the scaling phase with the help of individually tailored services.

Hybrid measures:

- **Mentoring, advice, and start-up grants**:
  - **The Media Founders Centre** offers 10,000 euros in start-up capital, practical input and experienced coaches and mentors to accelerate and consolidate the start-up phase. There is also a following program for those alumni who have already established basic structures and are facing new challenges as they become more professional.
  - **Innovation Funding by the Journalismus Lab** (State Institute for Media) in Media and Audio Innovation with a grant of 15.000€ for prototyping, mentoring, and coaching aimed at media start-ups who want to be supported in the further development of their product for six months or want to be supported in the development of innovative media formats, media products or distribution channels in the audio sector.

Research and innovation linked to the CCSIs

Collaboration within public and private sector provides the North Rhine-Westphalia territory with a good network of incubators and accelerators programs for start-ups. These accelerator programs are of outstanding importance for the region as a business location and universities play an essential role in them to set up more university-based start-ups.

The Minister for the Economy and Digitisation selected six universities at the beginning of 2019 to set up **Excellence Start-up Centers** to promote university-based start-ups. **Excellence start-up centers** are located in several universities in which the close networking with partners in business, such as Business angels, venture capital funds, start-ups, companies, accelerators, research institutions and technology centers play an important role. These excellent start-ups centers are in several universities as: RWTH Aachen, Ruhr University Bochum, Technical University of Dortmund, University of Cologne, Westphalian Wilhelms University in Munster, and University of Paderborn. As an example, the **Gateway Excellence Startup Center** from the University of Cologne currently oversees more than 35 start-up teams. The start-up projects are diverse in focus: B2B, B2C, Social Start-ups, Consumer Goods and Tec Startups. The focus is always on the idea and the knowledge and technology-based concept. Many of the start-ups are formed by students or alumni of the University of Cologne.

In North Rhine-Westphalia the **Competence centers related to AI and Machine Learning** are contributing to the transformation of cutting-edge research to business:

Kompetenzzentrum KI.NRW is developing North Rhine-Westphalia into one of Germany's leading locations for applied AI. The goal is to accelerate the transfer of AI from cutting-edge research to industry, to establish a lead region for professional qualification in AI, and to provide impetus for social dialog about AI.

ML2R – Das Kompetenzzentrum Maschinelles Lernen Rhein-Ruhr (The Rhine-Ruhr Machine Learning Competence Center) is one of six nationwide hubs for bringing the development of artificial intelligence and machine learning in Germany to a world-leading level. Establishing cutting-edge research, promoting young scientists and strengthen technology transfer to companies. Furthermore, they do connect pioneering research institutions in Germany: The Technical University of

Dortmund, the Fraunhofer Institute for Intelligent Analysis and Information Systems IAIS in Sankt Augustin, the Fraunhofer Institute for Material Flow and Logistics IML in Dortmund and the University of Bonn. The close integration of basic and application-oriented research builds the ideal foundation for innovation.

There are initiatives linking research-based transfer of ideas and start-ups within Cultural and Creative Sectors and Industries in the region (inter alia):

- **IDE** is the **Competence Center for innovation and startups at the University Duisburg-Essen.** The aim of the IDE is the visible and sustainable promotion of the university's internal innovation generation and spin-offs from the university. The IDE actively promotes and supports the development and implementation of product ideas and business concepts from the University of Duisburg-Essen, whether it's a high-tech product or a social project. worth

- **Hochschule Niederrhein (University of Applied Science) - Leuchtturm_NR-Projekt.** A federal-state initiative to promote the research-based transfer of ideas, knowledge and technology supporting SMEs in their future product development, with the focus on textiles and materials. The project aims for long-term, successful cooperation between universities and companies or organizations.

- **Creative Campus Detmold.** Detmold located in OstWestfalenLippe is home to more than 180 institutions that are active in the cultural and creative industries. A hotspot for cooperation between universities, vocational training, cultural institutions, and companies is being created here. The basis for this is the collaboration of the University of Paderborn with excellent skills in computer science, media production of the Technical University of OWL and the University of Music Detmold. The focus on the Creative Campus Detmold is to **advance innovations in digital application research** in **music and film informatics** and in the field of **virtual environments**.

- **KreativInstitut.OWL.** Recently created in 2021, located at Creative Campus Detmold performs a transfer function between science, business, and society in the creative sector. Under the leadership of the Technical

University of Ostwestfalen-Lippe in association with the University of Paderborn and the University of Music Detmold.

- **Innovation Hub at the University of Applied Sciences Düsseldorf**. It is a cooperation between the university and companies in the digital economy on an equal footing. It offers Ideation, conception, implementation, and exploitation of innovative solutions in the digital economy. It offers a framework for brainstorming, conception, implementation, and exploitation of innovative solutions in the digital economy. Here, universities and companies work together on digital innovations. The EUROPEAN UNION and the state of North Rhine-Westphalia support the innovation hub as part of the ERDF program (European Fund for Regional Development / Investments in our future).

- **Visionlabs.** Is the Institute for visionary product and innovation development at the University of Wuppertal. The aim of the institute is to develop visionary, forward-looking and innovative products and services that formulate perspectives for the technological, social, and ecological challenges of the medium and long-term future. Equally anchored in the bachelor's program in Industrial Design and the master's program in Strategic Product and Innovation Development, the Institute concentrates on disciplinary, interdisciplinary, and transdisciplinary research.

Innovation ecosystems

There are many university-based incubator programs to support developing start-ups as we have just mentioned in the section above in relation with research linked to CCSIs.

In terms of innovation ecosystem outside universities it is important to highlight the creative networks in the region. With **CREATIVE.Spaces** designation, CREATIVE.NRW (competence center and consultancy for creatives by North Rhine-Westphalian Ministry for Economic Affairs, Innovation, Digitization, and Energy) recognizes the commitment and work of the creative networks in North Rhine-Westphalia and their state-wide networking activities in different cultural and creatives sectors. There are 20 networks and all of them are working on innovative projects, some of them with companies, some of them also in cooperation with universities and cities, for example:

- **Insane Urban Cowboys** is an association of creators located in the area around Bochumer Strasse in Gelsenkirchen-Ückendorf, which has been designated the Creative Quartier. The association offers mutual support to the members in their entrepreneurial, social, artistic and cultural activities and supporting the creative entrepreneurial spirit in Gelsenkirchen and the Ruhr area.
- **Impact Hub Ruhr** is part of a global network and is committed to anchoring innovation through sustainable approaches in society and the economy. As a coworking space, event organizer and consultant, they connect freelancers, creative people, social entrepreneurs, and companies with the same mission and innovation is shared through unusual partnerships. Some of their activities are to advise and support young founders as part of the Business Help Desk and various funding programs, organize and host hackathons, such as the Climathon, go to universities, schools and companies with the Entrepreneurship Camp and offer creative workshops.
- **Die Urbanisten** improves the urban coexistence of local people and create new perspectives for urban living spaces. The non-profit association is a driving force, initiator, and participation platform for actively helping to shape your own city. The focus of their work is the public space as an interface between existing forms of culture, growing structures, and people's individual ideas. In our vision of a modern society, the residents are responsible for shaping their living space and combining their individual resources: local, creative, and lively.
- **B-Side Kultur** it is a cultural association and runs some projects to support the cultural community. For example, in cooperation with Kammerflimmern Münster, B-Side Kultur offers the actors of the local cultural scene the accompanied production of live streams. The co-producers provide the necessary technology, space, and know-how to make this new type of artistic expression easily accessible.
- **Utopiastadt** is a sociocultural center in Wuppertal, Germany, located in the city district of Elberfeld in the buildings of the now defunct railway station Wuppertal-Mirke. A wide range of projects takes place aiming to do the world a better place: the Common-good scholarship, the Co-

research project in which students and lecturers from different departments and different degrees meet with practitioners from the area around Utopiastadt in an open round. Concrete topics, questions and problems from the district are linked to scientific questions and methods, from which individual research projects arise.

There are start-ups contact points for data-driven or digital business models supporting the launch of digital products with accelerator programs, like the five **DWNRW hubs** (state supported) in Aachen, Bonn, Düsseldorf, the Münsterland and the Ruhr area (Essen). To do this, they link start-ups with mentors, established companies and the investment scene. Established companies get access to start-ups and digital products.

ACCELERATE.NRW is an accelerator platform that supports founders by showing all the opportunities related with developing start-ups and accelerator programs from coaching & mentoring through financing and networking. There are 43 programs in their website covering creative and cultural industries and other tech industries.

In the Ministry of Economic Affairs, Innovation, Digitalization and Energy of North Rhine-Westphalia website[2] there is a map showing **more than 525 results among innovation ecosystem stakeholders** in the regions as: hubs, labs, technology incubators, networks and clusters, chambers and business development agencies, Innovation partner NRW and initiatives and associations

[2] https://www.xn--grnden-4ya.nrw/gr%C3%BCndungsland

PIEDMONT

Creative and Cultural sectors

Osservatorio Culturale del Piemonte, a public-private partnership that carries out research, consultancy, assistance and support to decision makers and cultural sector realities; is monitoring cultural and creative industries according to the methodology used by the Symbola Foundation that considers the following sectors as cultural and creative industries. The Symbola Foundation is nationwide foundation that focuses on companies and institutions that are centered on innovation and development, beauty and creativity, human capital and territory.

Creative industries:

- Architecture
- Design
- Communication (including advertising, press offices)

Cultural industries:

- Audiovisual
- Recording
- Videogames and software
- Publishing
- Performing and visual arts
- Cultural heritage

The most relevant sectors are **software and videogames companies, publishing, design, and architecture.** There are 18.264 companies in the cultural and creative sector with a total gross added value of 4.046 mil. € that represents a 3,8% of the regional gross added value, about 70% of the entire regional cultural and creative sector. **Employment in CCSIs** a total amount of **is the 4% of Piemonte's total employment** with 64.805 workers.

R+D+I policies

In 2019 in Piedmont the expenditure on research and development was about 3.122.136€ by private companies, universities, public and private institutions. Our regional expenditure on R&D represented the 12% of total expenditure at national level.

Government authorities tasked to support CCSIs

In Piemonte, the governance system depends on the Estate competences and the Region level of administration, in charge of territorial planning and programming. For the cultural and creative sector, there are mixed competencies, partly by the State directly intervening and managing, and partly by the Regions.

The framework of regional governance provides different levels of intervention and competences.

On a State level, the Ministry of Culture through the **Directorate-General for Contemporary Creativity** fulfils different functions and roles in relation to the promotion, support, and valorization of contemporary Italian creativity. Including photography and videoart, applied arts, design and fashion, architectural and urban quality, cultural and creative enterprises and promotes urban regeneration interventions.

On a regional level, the main policy makers that support Cultural and Creative sectors in Piemonte are:

- **Segretariato Regionale per il Piemonte** (Regional Directorate for Cultural and Landscape Heritage of Piedmont)**.** It has a concurrent legislative competence in cultural affairs and coordinates the activities of the peripheral structures of "Ministry for Cultural Heritage and Activities" (Mibac) in the region and cultivate relationships, local authorities and other institutions operating in competence. It is involved in three key areas: the protection and promotion of artistic and historical heritage, the economic and financial management and the organizational coordination.
- **Municipal administrations**. Supporting with grants or direct funding museum, public libraries, performing and visual arts associations.
- **Chambers of Commerce** which, following the 2019 reform, have added to their territorial development skills also the support for cultural enterprises and the enhancement of cultural heritage.

Concerning territorial governance, besides the Central State, the highest level is represented by the regional administration followed by Municipalities and Chambers of Commerce.

Support policies and programs

In terms of support policies and programs targeted to creative and cultural industries, economic and non-economic measures are the main ones present in the Piedmont region.

Economic measures

Funding:

National budget law:

Fund for **Creative Small and Medium-sized Enterprises** is set up to promote its development through grants, subsidized financing, and combinations thereof, as well as to promote the collaboration of creative enterprises with enterprises in other productive sectors, as well as with universities and research bodies.

Ministerio della Cultura, Segretariato Regionale per il Piemonte (Regional Directorate for Cultural and Landscape Heritage of Piedmont)

In the **publishing sector**, for example, regional laws provide economic support to realize one of the major Italian book fairs and promote local publishing, through participation in national and international book fairs, promote reading and business development and training. The Region supports with several calls publishing, with particular attention to publishing companies and independent bookstores that contribute to spreading and promoting the book in the area. The objective is to support the book supply chain and to respond to the needs of the sector, which emerged during the epidemic crisis of 2020 and linked to the development of new promotion and sales strategies, to retain and increase the public also through alternative modalities.

In the audiovisual and cinema sector **Film Commission Torino Piemonte**, a Foundation financed by regional and city administration, promotes the development of the supply chain in the region giving support to the productions that choose to produce in Piedmont.

Non-economic measures:

Training opportunities:

- **Hangar,** project by the Department of Culture and Tourism of the Piedmont Region and carried out by the Piemonte dal Vivo Foundation, **offers coaching and training** with laboratories, lectures, seminars, workshops, and calls dedicated to specific projects aiming to the sustainable development of cultural organizations. Giving tools for management, euro-planning, internal organization, strategic communication, digital marketing, and fundraising activities.

Support and advice:

- **New Enterprises Sector of the Turin Chamber of Commerce, Industry, Handicraft and Agriculture** offering a helping desk for the creation of new enterprises.

Banking Foundations, even though they are a private agent**,** provide grants exclusively to nonprofit organizations as in Piedmont there are 2 of the most important European Banking Foundations. Unlike the other Italian regions, Piedmont can rely on a big number of additional resources, compared to those from public entities only. The investment of Banking foundation in culture is bigger than the regional budget for culture.

Research and innovation linked to the CCSIs

The presence and importance of **Innovation clusters** in Piedmont is due to one of the industrial policy tools put in place by the Regional Administration in 2009, in the framework of the European ROP ERDF for Piedmont (2007-2013). The result is the implementation of **several clusters formed by companies and research organizations** characterized by a high sectoral specialization and a strong orientation to innovate. Their aim is to spread a culture of cooperation and encourage business' models oriented to collaborate. Furthermore, having competencies in different technologies and a rich industrial atmosphere is the legacy that the strong presence of the automotive industry left on the territory.

There are several stakeholders in the region and the presence of innovation clusters are an important piece. Today there are **7 Innovation Clusters** active in Piedmont in the sectors of **agri-food, ICT, green chemistry and advanced materials, energy and clean technologies, textile.** The companies involved are about 1.200 and during the last programming 2014-2020 they have implemented industrial research projects and experimental development, activating about 200 collaborations with research institutions.

In terms of creative and cultural industries, the main cluster is **Turin Social Impact**, an alliance between companies and public and private institutions to make Turin one of the best places in the world for doing business and finance by intentionally and jointly pursuing objectives of economic profitability and social impact. A cluster of skills, activities, and services to strengthen and promote the local ecosystem within the framework of the 2030 Agenda. It is an open platform to which over 180 companies, institutions, financial operators and third sector subjects have joined by signing a MoU aimed at pooling ideas, experiences, projects and resources to catalyze and attract forms of entrepreneurship which, by exploiting the new technological opportunities aim to solve emerging social problems through economically sustainable business models. The signatories of the MoU are part of the Torino Social Impact Co-Planning Assembly, whose operational structure is financed by the Turin Chamber of Commerce as part of the activities of the Committee for Social Entrepreneurship and the private foundation Compagnia di San Paolo. The individual projects receive finalized contributions from the various partners.

Innovation ecosystems

There are **three start-ups' incubators** linked to universities in Piemonte incubating around 70-80 start-ups each year and some of them belong to the cultural sector. The universities and the research and innovation institutions connected to it, represent the main pool of technical and scientific expertise for the development of incubated start-ups and provide access to highly qualified human resources.

- **I3P. Incubatore Politecnico de Torino** run by the Politecnico of Turin supports the creation and development of innovative start-ups with high technological intensity and growth potential, founded both by university researchers and students, and by external entrepreneurs, providing strategic consulting services, coaching, mentoring, fundraising support, and spaces.

- **2i3T Business Incubator and Technology Transfer process** from the **University of Turin**. It is primarily focused on commercially valorizing the results of academic research by creating, promoting, and supporting new, knowledge-intensive businesses. It can be defined as a "bridging institution", as it brings together the activities of the University and its associated industrial fabric by acting as a facilitator at the point where the knowledge derived from academic research and business management skills meet. It offers also full support to new start-ups and offers new-entrepreneurs and businesses the chance to benefit from the professionalism of the industry and business consultancy worlds, as well as the expertise in national and international business development and management.

- **Enne 3 by the University of Northeast Piedmont** is responsible for promoting and developing innovative business projects with a technological, creative, and social attitude, with particular attention to the territory of Eastern Piedmont. The incubator provides services aimed at starting up businesses, such as feasibility studies, opportunity analysis and strategic positioning; moreover, it provides the skills of its team of experts, from marketing to tax assistance, from project management to access to credit, as well as discounted rates for a series of affiliated professionals.

The three institutions together are incubating some **70-80 start-up** each year, few of them in the cultural sector.

In terms of innovation in cultural and creative industries, there are also other stakeholders that are contributing to the promotion of innovation ecosystems, especially in terms of social and environmental impact. Some of these initiatives are a public-private partnerships, foundations, and associations.

- The **Fitzcarraldo Foundation** contributes to the development, dissemination and promotion of innovation and experimentation in planning, research, training and documentation activities on management, economy and culture, arts, and media policies. Systematically collaborating with local, regional, national, and international bodies and organizations.

- **The Cultural Observatory of Piedmont** is a public-private partnership born from the agreement between institutions and local administrations, foundations with a banking origin, trade associations, non-economic public bodies, public and private research institutes founded in 1998.
  The Observatory carries out research, consultancy, assistance and support to decision makers and cultural sector realities. It offers a business intelligence service, through the collection, creation of time series, analysis

of data and information on consumption, economic and employment resources, production, and cultural offer.

- The presence of a makerspace is also important **for the social innovation projects** developed in the region. **Fablab Torino** is a cultural association, a digital manufacturing laboratory and a makerspace. Fabrication Lab oratories are places where traditional do-it-yourself meets Open-Source technologies and techniques for rapid prototyping. In a FabLab you will find 3D printers, laser cutting machines, numerical control milling machines, electronic boards, and other tools of the trade to turn your ideas into projects and projects into reality.

- **SocialFare** is the first center for Social Innovation in Italy and have an **accelerator program for impact startups**. It is a unique program of expert advice and equity investment for the generation of impact entrepreneurship.

- **Rette delle Case del Quartiere** (Houses of the Neighborhood Network) it is a local network that brings together spaces for public use open to all citizens to spread good practices of social innovation and urban regeneration, starting from the needs of the territories.

- **Hangar Piemonte** is a Cultural Transformation Agency aimed at spreading **the design culture and enhancing the ability to make strategic decisions**. It is a project by the Department of Culture and Tourism of the Piedmont Region and carried out by the Piemonte dal Vivo Foundation. It is aimed at anyone who wants to develop their skills and managerial skills in the cultural field, from freelancers to institutions, associations, non-profit organizations. The goal is to spread the design culture and enhance everyone's ability to make strategic decisions.

- **OGR Tech** is one of the largest innovation hubs in Italy focused on innovation and technology. It operates verticals such as artificial intelligence, smart mobility, gaming and blockchain. It hosts startups to accelerate, incubate and support in their growth process as **Impact Deal** is the first **European acceleration program** for companies with social and environmental impact, launched by Fondazione CRT and OGR Torino with

Microsoft, leveraging data for fairer and more sustainable growth. The program provides companies with free training and mentorship, technical resources and, above all, access to databases – granted by an initial group of private and public organizations brought together in Impact Deal's Data Club. The Data Science for Social Good Center is the program's scientific partner. OGR hosts also other hubs like the **Data Science for Social Good Center**, a knowledge hub for the application of Data and AI to better identify needs, guide interventions, and evaluate the impact of decisions and policies.

BASQUE COUNTRY

Creative and Cultural sectors

Based on the classification made by the Basque Observatory of Culture, the subsectors and activities that make up the Cultural and Creative Industries in Euskadi have been defined and grouped as follows:

Cultural subsectors:

- Performing Arts
- Visual Arts
- Audio-visual
- Music
- Publishing and Printed Media
- Cultural Heritage

Creative Subsectors:

- Architecture
- Craft
- Digital Contents
- Design
- Gastronomy
- Language Industries
- Fashion
- Advertising and Marketing
- Videogames

According to 2019 data from the Basque Observatory of Culture about sector's turnover in Euskadi the **audiovisual sector** tops the list with 205,7 million followed by **advertising** with 139 million and **music** with 98,2 million.

The Cultural and Creative Industries account for **10.25% of the companies in the Basque Country** in 2019, and **5.29% of total employment**. According to 2019 data from the Basque Observatory of Culture, in the Basque Country the Cultural and Creative Industries cover 16,122 companies and 48,161 jobs. Generally, the companies are micro-companies, with an average ratio of 2.99 jobs per company (compared to a general regional ratio of 5.79). In the case of creative industries, this factor is accentuated, with a ratio that drops to 2.2 jobs per company.

R+D+I

The new *Euskadi 2030 Science, Technology, and Innovation Plan* (2030 STIP) represents Euskadi's strategic commitment to Research and Innovation.

It is a smart specialization strategy to drive the Sustainable and Economic Development of the Basque Country. It is the result of a participative process involving interdepartmental cooperation of the Basque Government and the stakeholders represented on the Basque Science, Technology, and Innovation Council. There has also been input from European stakeholders and key figures in the field of science, innovation, and research. The plan envisages an innovation and research policy based on smart specialization and enhancing the efficiency of the Science, Technology, and Innovation System through four strategic lines:

- Driving the smart specialization strategy, by means of science, technology, and innovation to address the social challenges of the Basque Country.
- Strengthening the industrial leadership by means of private-public partnership
- Enhancing the excellence of the Science, Technology, and Innovation System
- Guaranteeing the development of human capital in science, technology, and innovation.

Government authorities tasked to support CCI's

Euskadi enjoys a high level of self-government and an "Economic Agreement" which gives the Basque institutions autonomy to collect and administer public taxation depending on their own budgets and on agreements signed with the central Spanish administration.

On a regional level, the **Basque Department of Culture and Language Policy** is the main governmental actor steering the support to the CCI's with a working area called **KSI: Cultural and Creative Industries in Euskadi** and an information system committed to analyse all the figures related to culture as the **Basque Observatory for Culture**. A process of reflection around Research, Development and Innovation (R&D&I) in the Basque cultural and creative sector started in 2019.

The reason to undertake this action was the **R&D&I deficit** reflected in data collected by Innobasque (Innovation Agency of the Basque Country). The observation showed that the investment in innovation in the cultural and creative industries was experiencing a negative evolution, which contrasted with the increase of investments in Research & Development in the region.

In consequence, the Department of Culture and Language Policy of the Basque Government initiated a project where international experts in R&D&I in CCI's analysed and debated models and practices around the measuring of R&D&I. The project was divided in three working groups. The first two groups focused on the study of Innovation and Research & Development, and the third one, in charge of the measuring of innovation, concluded that this pilot study was needed to complete the research. Indeed, the purpose of the project is to find out the trends, characteristics, and typologies to nourish and complement the research that has been done.

The Basque Government has made a clear commitment to fostering CCIs as driving forces for regional development and competitiveness. Indeed, the CCI´s get an outstanding position within the RIS3 strategy for the Basque Country (**Regional Innovation Strategy for Smart Specialization**), as they are considered one of the four territories of opportunity, together with Food, Ecosystems, and Urban Habitat. This has allowed to place the CCI´s at the same level of other strategic sectors of the 2030 STIP, such as Energy or Advanced Manufacturing, and to set the basis to make them work together as well. In this context emerges **Creative Euskadi**, a new interdepartmental program steered by the Department of Culture and Language Policy, Department of Economic Development and Infrastructures, and Presidency Department, with the goal of developing the potential of CCI´s through innovation.

On a provincial level, there are the provincial councils with their agents. Overall, the support policies to CCI´s are shared between the Departments of Culture and Economic Development: the first one being focused on the cultural activity, whereas the second one, on innovation and entrepreneurship enhancement. It is similar on the municipality level.

In the case of the **Provincial Council of Bizkaia** Bizkaia, **Beaz** is a public company which aims to support enterprises and entrepreneurs in their efforts to create new projects, innovate and internationalise. Dependent on the **Provincial Department**

of Economic and Territorial Development and contributing to the growth of economic activity and the creation of qualified jobs. Inside Beaz there is the initiative for the promotion of CCI's called **Bizkaia Creativa**. Beaz manages various aids that support the implementation of innovative enterprises, the development of projects with high added value, technological or not, as well as innovation, internationalisation, and investment. Likewise, Beaz promotes through partnerships with other organisations and networks of incubators, intra-entrepreneurship, acceleration, mentoring or inter-company collaboration and dissemination services.

Concerning the Provincial Council of Araba, and as part of its work to promote the economic development of the Territory, since 2018 the Department of Economic Development, Innovation and Demographic Challenge has been supporting the cultural and creative industries, and specifically, the entrepreneurship and consolidation of the **Araba audiovisual industry.**

As regards the **Provincial Council of Gipuzkoa**, the Department of Economic Promotion, Tourism, and Rural Environment, since 2018 has supported the creative sector mainly through call for proposals (**Ekonomia Sortzailea** program), to increase the value of the **creative economy**, not only in economic terms but also social. The creative economy is one of the seven priority axes (among which are also included circular economy or knowledge transfer) defined under a holistic strategy (jointly developed with other policy areas) to support companies in Gipuzkoa to generate new opportunities, added value and sustainability.

Support policies and public programmes

In terms of support policies and programs targeted to creative and cultural industries these are the economic and non-economic measures in the Basque Country.

Economic measures

Regional level

Grants targeted to CCI's by Department of Culture and Language Policy of the Basque Government aimed to support CCI's.

- **KSITek** targeted for associations of the Cultural and Creative Industries sector of the Basque Country started in 2021.
  The priority challenge is the incorporation and transfer of digitalization technologies in the field of CCI's companies. It is intended to identify projects that favor the digital transformation of the CCI sector. The technology must provide added value in the design, production, creation, distribution, exhibition, consumption, and interaction of the current products / services offered by the association. To ensure that the partnerships have the right tools, **it is an essential requirement that the associations collaborate with a technological agent** expert in digital transformation with whom to carry out the project.
- **KSI BERRITZAILE** (innovative CCI's) aimed at companies in the field of Basque Cultural and Creative Industries, with the aim of creating and developing spaces of opportunity for new projects in three axes of action: technological innovation, innovation of organizational model and financial training of companies. Program started in 2017 and ended in 2020.
- **EGOKITU 2020.** Aimed at those companies in the CCI sector that are already established and with a certain track record, which the current crisis has led them to rethink their business model, need support or advice to manage current financing, or must address the digitization of their products and services, or processes. Program started and ended in 2020.
- **KSIAtea** has addressed the development and evaluation of internationalization plans for Basque companies in the CCIs sector, as well as the dissemination of its results. It is framed as a program that facilitates Basque CCI's companies the access to the ongoing programs and initiatives of internationalization. Program started in 2019 and ended in 2020.

Grants by BEAZ, Bizkaia Creativa, Bizkaia Provincial Council.

Aids to promote new emerging sectors of economic activity related to creative industries in all areas of application.

It is mainly targeted to creative companies in Bizkaia that develop their main activity in the areas of audiovisual, video games, fashion and industrial design of products and services. Funding it must be allocated for

- the creation of a creative company.
- the development of projects to improve competitiveness in an existing creative company, which consist of a new line of creative business that involves a clear diversification of the company's activity or a project that allows the standardization of the product / service or scalability of the existing business.
- the international commercial launch of creative products already developed, for existing creative companies.
- the development of projects to increase professional skills and the turnover and / or employment of creative companies.

Grants EKONOMIA SORTZAILEA by Gipuzkoa Provincial Council

Promote the transformative value of the creative economy to generate and contribute to the development of areas of opportunity and added value. It is addressed to companies and associations; grants are oriented to:

- the setting-up of new business projects and/or activities in the field of the creative economy
- integrate the human-centered design within companies
- create, develop and participate in collaboration networks
- identify and develop competences and business and/or territory value chains, as well as new areas of opportunity
- Create synergies and hybridize with other sectors of activity beyond creative economy.
- Design added value businesses and best practices
- Articulate new value proposals through the hybridization with the creative economy.

The aid covers 80% of the eligible costs.

Grants for the AUDIOVISUAL CREATION by Araba Provincial Council

Grants for the development and production of audiovisual projects and scriptwriting up to 60.000 €.

<u>Non-economic measures:</u>

Guidance and advice:

Basque District of Culture and Creativity was founded with the aim of uniting and reinforcing different public and private initiatives to develop the Cultural and Creative Industries in the Basque Country. This programme is coordinated by the Department of Culture and Linguistic Policy, the Department of Economic Development of the Basque Government, and the agencies SPRI and Innobasque. As a district, it aims to unify economic development, innovation, and cultural perspectives, also involving the Basque Government, Regional Governments and the three capital cities: Vitoria, Donostia and Bilbao. In addition to these institutions, it brings together the efforts of other entities in the ecosystem, such as technological centres, Universities, sectoral and cultural agents, etc. focussing on a main approach: companies. Offers to cultural and creative entrepreneur's advice and guidance for their business or projects through a wide range of tools.

Research and innovation linked to CCI's

The Basque Country has created an important network of clusters aimed at increasing the competitiveness of companies through cooperation and with the support of institutions and universities, which has meant strengthening the Basque industrial fabric.

The Basque Business Development Agency (Spri Group) is the entity of the Economic Development, Sustainability and Environment Department of the Basque Government for promoting the Basque industry. Spri Group coordinates the clusters and pre-clusters of the Basque Country. These are the clusters related with the cultural and creative sector:

- **EIKEN:** Association of Basque companies dedicated to the creation and distribution of contents related to the **industries of the creative economy**. It is a non-profit, sectorial business association. Its members are firms based in the Basque Country which create, and broadcast contents related with the Creative Industries.
- **Aclima:** Cluster representing waste value chains (minimization, reuse, remanufacturing, energy recovery, recycling, and management), contaminated soils (research and recovery), integral water cycle, air and climate change, ecosystems, and efficient manufacturing and ecodesign.

- **Habic:** Habic is the equipment, furniture, and design cluster in the Basque Country. It brings together the main companies in the sector whose scope of action is the equipping of collectives, homes, hospitals, hotels, offices, and work environments.
- **GAIA** is the Industry Association of Applied Knowledge and Technologies

Since 2021, the **departments of Education and Culture and Language Policy of the Basque Government** have promoted the **Ksigune cluster** of **Cultural and Creative industries**. It is a strategic tool to develop actions in the fields of higher education, research, innovation, and transfer related mainly to the needs of the cultural and creative sector.

Other relevant CCI's clusters are:

- **Langune**: unites the Basque Country's Language Industry and enhances the competitiveness and visibility of the sector and members of the association, through management excellence, co-operation, innovation, technology development and internationalization.
- **Basquemoda**: fashion cluster to bring together the various agents involved (designers, stores, manufacturers, and distributors).

There are also **professional associations** formed by companies and professionals working in the same subsector and with the same interests as:

- **Euskal Herriko Musika Bulegoa** (Music Promotion Office in the Basque Country). It was founded to support and promote music created and produced in the Basque Country. EHMBE (Euskal Herriko Musika Bulego Elkartea) is the association that supports the Office.
- **Karraskan**: professional association for the promotion of innovation in culture and the culture of innovation in the Basque Country.
- **Eskena**: association of performing arts production of the Basque Country.

- **Association of Advertising Agencies of Bizkaia**

Besides the clusters, some collaborators in the innovation scene are the **research centres and innovation networks** within technology development, applied research, artificial intelligence, visual computing, and gastronomy:

- **Basque Research and Technology Alliance** (BRTA) promotes collaboration, excellence, specialisation, and critical mass in R&D to respond to the challenges of the Basque Country in a context of demographic-social, technological-digital, and energy-environmental transition.
- **Tecnalia Research and Innovation Foundation** is the largest center for applied research and technological development in Spain, a benchmark in Europe and a member of the Basque Research and Technology Alliance. In collaboration with companies and institutions to improve their competitiveness, the quality of life of people and achieve sustainable growth. Its main areas of action: smart manufacturing, digital transformation, energy transition, sustainable mobility, personalized health, and urban ecosystem.
- **Vicomtech** is an applied research centre specialising in artificial intelligence, visual computing and interactions, member of the Basque Research and Technology Alliance. It conducts research and generates solutions for business and business opportunities.
- **Basque Culinary Center** main aim is higher education, research, innovation and promotion of gastronomy and nutrition. It is a pioneering academic institution worldwide and contains a Faculty of Gastronomic Sciences attached to Mondragon University and a Centre for Research and Innovation.
- **The Basque Science, Technology, and Innovation Network** it is a group of research, development, and innovation entities that, working in a network, develop a balanced mix of R+D+I activity, carrying out specialized and excellent research that contributes to the creation of wealth and well-being in the Basque Country.
- **Innobasque, Basque Agency for innovation.** It is an agent of the Basque Science, Technology, and Innovation Network, to assist it in the design, implementation, and promotion of innovation policies. Set up as a private non-profit association composed by companies, organizations and entities aiming to turn the Basque Country into an innovative society in all its areas.

Innovation ecosystems

The Inter-institutional Entrepreneurship Plan 2021-2024 is the third inter-institutional plan to support entrepreneurship since the approval of the Law 16/2012 Support for Entrepreneurs and Small Businesses in the Basque Country. This Plan represents the commitment of the main public agents of the Basque Country to support entrepreneurship, as a shared effort for the economic and social transformation of the Basque Country, and proposes eleven challenges and 35 priority challenges to 2030 for the entrepreneurship ecosystem, which gathers more than 100 public and private agents. Among those challenges that stand out we can find: to place entrepreneurship as a priority; specialization in smart industry; establishment of new entrepreneurial missions or the creation of a pool of entrepreneurial talent.

UP EUSKADI is a new online platform to provide updated data and intelligence on the Basque Entrepreneurship Ecosystem. Any start-up, investor or other players in the ecosystem can also add their company details and enhance their profile by providing open access to data for the entire community. It is expected that this tool may provide valuable inputs for policy design and assessment processes, facilitating the decision-making processes based on data, knowledge exchange among sectors and creating the linkages to support the next generation of innovators.

BIND 4.0: Platform promoted by the Basque Government through the SPRI Group to support the transformation of industry by working with start-ups with cutting-edge technological solutions that increase business competitiveness. The programme offers mutually beneficial collaborations, as well as advice and training, which help boost the open innovation of Venture Clients and foster the growth of technology-based start-ups through real projects and benchmark clients.

The mission of the **business incubators and accelerators** is to enable start-ups to develop and acquire the necessary skills to address both the creation phase and the growth, consolidation, and projection of their business:

- **Bic Araba** provides support services to entrepreneurs and companies with the aim of promoting new innovative and/or technology-based business initiatives and fostering their development in Alava province.
- **Bic Bizkaia** is an incubator specialized in bio-micro-nano, advanced manufacturing, and clean technologies, promoted by the Basque Government and the Provincial Council of Bizkaia, and managed by Beaz. The incubator is located at the Technology and Scientific Park of Bizkaia in Derio. **Bic Bizkaia Ezkerraldea** is an incubator promoted by the Basque Government and the Provincial Council of Bizkaia, situated in Barakaldo, with

the primary mission of supporting innovative business initiatives in the region.

- **Bic Gipuzkoa** acts as a facilitator in the process of creating new innovative companies, as well as an active agent in the process of supporting and promoting the entrepreneurial culture in Gipuzkoa. It contributes in promoting innovation, qualification and consolidation of business activity in Gipuzkoa in close collaboration with Technology Centers, Public and Private Institutions and Universities.

Below some of the incubators aimed at accelerating projects having an impact on **the cultural and creative industries**:

- **KBi digital** is an incubator of advanced digital entrepreneurship projects created by the Bilbao City Council and the Provincial Council of Bizkaia to support companies and professionals that develop innovative products/services in the digital content sector.
- **Design Kabi** is a coworking space for business projects in the process of definition or setting-up, analysis and feasibility study of the company. Located in Beaz.
- **Zitek UPV/ EHU** is an initiative to promote entrepreneurial culture and the creation of innovative technology-based companies among the university community, promoted since 2000 by the UPV / EHU, the Provincial Council of Bizkaia and BEAZ,
- **Deusto Kabi** Incubator of technology-based companies, driven by the Provincial Council of Bizkaia and the University of Deusto to support the creation of university spin-offs, where Beaz (a public company of the Provincial Council of Bizkaia that supports enterprises and entrepreneurs) offers advice and support services to entrepreneurs.
- **HABIAN! Fabrika kreaktiboa** a creative incubator aimed at promoting and consolidating projects in the creative, artisanal, and technological fields. It is located in the town of Errenteria. They offer workspaces and facilities, equipment, and technical and strategic knowledge necessary to develop and start a project, advice on management, marketing, and funding.
- **Culinary Action!** By the Basque Culinary Center located in the city of Donosti that promotes the future of food through the development of products with a high innovative component (processes, raw material, output ...) or complementary industry technologies (machinery, software, technique ...).

Annex 2. Questionnaire data exploitation

Annex table 1. Participant organizations and project names

Catalonia	Flanders	North-Rhine Westphalia	Piedmont	Euskadi/Basque Country
Advanced Music Sónar	**Flora Miranda**	**Creative Hive - The Company**	**BAM! Strategie Culturali Soc.Coop.**	**alegria-activity**
Sónar+D	IT Pieces	Creative Hive	Museo Fuori! (part of Ritorno al Futuro project)	Science week's distance training.
Barcelona Events Musical SL	**Gluon**	**die urbanisten e.V.**	**Club Silencio**	**ARTgia - Irantzu Lekue**
Audience Consulting	S+T+ARTS	2020	Una notte al museo	FlashBack el trenico, Urazpi
ESPRONCEDA - Institute of Art & Culture	**iDROPS vzw**	**dreiform**	**DepurArte aps**	**BCC Innovation**
IMMENSIVA	Connected.Dots	visme	DepurArte Torino	bcc, bcc innovation, labe
Eyesberg Lab SL	**Milton BV and SKaGeN vzw**	**LAVAlabs Moving Images GmbH & Co.KG**	**Fondazione per l'architettura**	**c2masi S.L.**
Immersive experiences	Watchapp	www.innovationhub.de www.lavalabs.de	Cultura di base	Conexiones improbables
Freeverse.io	**MUTANI**	**Mobiler Kunst-Container**	**Fondazione Piemonte dal vivo**	**Elhuyar**
Freeverse	MUTANI	Please Touch!	DAP- Dance Agency Project Media Dance/Educare alla bellezza	Mycroft.EUS
Fundació Privada Joan Bosch	**Namahn bv**	**ökoRAUSCH Think Tank e.V.**	**Giardino Forbito**	**Estudios Durero**
Festival Z	Systemic design toolkit	ökökoRAUSCH Festival for Design & Sustainability	Giardino Forbito	Estudios Durero
Nextus Social Learning, S.L.U. (100% Planeta Med)	**Poppins & Wayne**	**Rosy DX**	**Kalatà srl Impresa Sociale**	**Import Arrasate S.L. (Ternua Group)**
nextus	Pollinator Park	Neue Künste Ruhr	Revelia	WEARCYCLE project
Offf Events S.L.	**PreviewLabs**	**strike a pose**	**Municipality of Verbania - Public Library**	**Last Tour**
Offf. Made for the curious	KneeVR	strike a pose	Escape Room 'Ventiquattro Elle'	BIME PRO
Pol·len edicions, sccl	**Studio Dott**	**the Good Evil**	**Museo Egizio**	**PAUSOKA ENTERTAINMENT**
Eco-publishing (ecoedició)	12Work (pronounced as Want To Work)	MARLA	Archeologia Invisibile	Automatic Mask Generation
Taller Estampa		**ZWISCHENGANG GbR**	**COMUNITÁ VISO A VISO**	**Pezestudio SC**
Artificial Intelligence applied to arts		ZWISCHENGANG über Essen und Trinken in Köln	Marlene Kuntz concert	Biotic City
				Punta Begoña Fundazioa
				Recuperación y puesta en valor de las Galerías Punta Begoña
				Sanagustin Azpeitiko Kulturgunea Kooperatiba Elkartea
				Kulturaz
				TARIMA LOGÍSTICA DEL ESPECTÁCULO
				Innovación y transferencia tecnológica
				Virtualware

Annex table 2. Sectors represented at the CCSI's & Innovation Contrast Questionnaire's (own taxonomy)

Sectors	Working field	Piedmont	NRW	Basque Country	Catalonia	Flanders
Cultural heritage	Cultural	3	0	1	0	0
Performing arts		2	0	1	1	1
Multidisciplinary spaces		1	0	1	1	0
Visual arts		1	1	1	2	0
Publishing		0	1	0	1	0
Music		0	0	1	2	0
Audiovisual		0	0	1	2	0
Architecture and urban planning	Creative	1	1	1	0	0
Gastronomy		1	0	1	0	0
Videogames		0	1	0	0	2
Design		0	2	1	1	4
Fashion		0	1	1	0	2
Language industries		0	0	1	0	0
Advertising		0	1	1	0	0
Strategic design and services	Cross disciplinary	1	0	1	0	0
Digital/ Technology		0	2	1	0	0

Annex table 3. Year of foundation

	Less than 10 years	More than 10 years	More than 20 years
Catalonia	44,44%	33,33%	22,22%
Basque Country	21,43%	42,86%	35,71%
Flanders	44,44%	44,44%	11,11%
North Rhine-Westphalia	50,00%	30,00%	20,00%
Piedmont	40,00%	40,00%	20,00%
Total	**38,46%**	**38,46%**	**23,08%**

Annex table 4. Answers to "Which of the following two options do you identify with?"

	A non-innovative company or organisation, with an innovative project	An innovative company or organisation, with an innovative project
Catalonia	0,00%	100,00%
Basque Country	14,29%	85,71%
Flanders	0,00%	100,00%
North Rhine-Westphalia	0,00%	100,00%
Piedmont	50,00%	50,00%
Total	**13,21%**	**86,79%**

Annex table 5. Answers to "Which of the following options best describes your company or organisation?"

	A private sector company or organisation	A public sector company or organisation	Third sector
Catalonia	100,00%	0,00%	0,00%
Basque Country	85,71%	7,14%	7,14%
Flanders	88,89%	11,11%	0,00%
North Rhine-Westphalia	100,00%	0,00%	0,00%
Piedmont	80,00%	10,00%	10,00%
Total	**90,57%**	**5,66%**	**3,77%**

Annex table 6. Answers to "How many employees work for your company or organisation?"

	1 – 9	10 - 49	50 - 99	100 or more
Catalonia	50,00%	50,00%	0,00%	0,00%
Basque Country	28,57%	35,71%	14,29%	21,43%
Flanders	66,67%	33,33%	0,00%	0,00%
North Rhine-Westphalia	80,00%	20,00%	0,00%	0,00%
Piedmont	70,00%	20,00%	10,00%	0,00%
Total	**56,60%**	**32,08%**	**5,66%**	**5,66%**

Annex table 7. Average stakeholders' variety type per project in each region

Catalonia	6,30
Basque Country	6,29
Flanders	6,22
North Rhine-Westphalia	5,50
Piedmont	5,60
Total	**6,00**

Annex table 8. Work with each type of stakeholder per region

	Catalonia	Basque Country	Flanders	North Rhine-Westphalia	Piedmont	**Total**
Other companies within the same sector	100,00%	78,57%	88,89%	70,00%	80,00%	**83,02%**
Companies in other sectors	80,00%	92,86%	88,89%	90,00%	80,00%	**86,79%**
Creative professionals external to the company	100,00%	92,86%	88,89%	100,00%	70,00%	**90,57%**
Regional or National Funding Organisations	90,00%	78,57%	88,89%	70,00%	90,00%	**83,02%**
European Funding Organisations	50,00%	57,14%	55,56%	30,00%	30,00%	**45,28%**
Public Organisations or Institutions (Local Government)	80,00%	92,86%	77,78%	80,00%	90,00%	**84,91%**
Research Centres	50,00%	64,29%	66,67%	30,00%	50,00%	**52,83%**
Education Centres (Universities)	80,00%	85,71%	66,67%	80,00%	70,00%	**77,36%**

Annex table 9. Answers to each question about awareness and access to different policies per region

	Catalonia	Basque Country	Flanders	North Rhine-Westphalia	Piedmont	**Total**
Are you aware of any public policies in your region that support Research, Development, and Innovation (R+D+I)?	80,00%	85,71%	88,89%	50,00%	50,00%	**71,70%**
Have you participated or are you aware of any training and learning opportunities that encourage innovation and entrepreneurship in your region?	70,00%	64,29%	77,78%	30,00%	80,00%	**64,15%**
Are there any platforms or facilities in your region that act as creative incubators, therefore allowing and encouraging atmosphere for innovation and entrepreneurship?	90,00%	57,14%	88,89%	100,00%	70,00%	**79,25%**
Have you ever obtained public funding for innovative projects?	60,00%	92,86%	88,89%	70,00%	90,00%	**81,13%**

Annex table 10. Level of funding organisations

	European	**National**	**Regional**	**Local**	**Private**
Catalonia	25,00%	25,00%	50,00%	0,00%	0,00%
Basque Country	22,73%	4,55%	54,55%	18,18%	0,00%
Flanders	37,50%	0,00%	50,00%	12,50%	0,00%
North Rhine-Westphalia	21,43%	35,71%	21,43%	14,29%	7,14%
Piedmont	33,33%	0,00%	25,00%	8,33%	33,33%
Total	26,56%	12,50%	40,63%	12,50%	7,81%

Annex table 11. Type of innovation (Internal or External)

	Both	**External**	**Internal**	**None**
Catalonia	40,00%	30,00%	10,00%	20,00%
Basque Country	35,71%	28,57%	7,14%	28,57%
Flanders	11,11%	33,33%	11,11%	44,44%
North Rhine-Westphalia	30,00%	20,00%	20,00%	30,00%
Piedmont	0,00%	20,00%	20,00%	60,00%
Total	**24,53%**	**26,42%**	**13,21%**	**35,85%**

Annex table 12. Type of innovation (Process or Product)

	Both	**Process**	**Product**	**None**
Catalonia	30,00%	20,00%	40,00%	10,00%
Basque Country	35,71%	7,14%	28,57%	28,57%
Flanders	33,33%	11,11%	44,44%	11,11%
North Rhine-Westphalia	20,00%	30,00%	50,00%	0,00%
Piedmont	10,00%	50,00%	30,00%	10,00%
Total	**26,42%**	**22,64%**	**37,74%**	**13,21%**

Annex table 13. Type of innovation (Social or Technological)

	Both	Social	Technological	None
Catalonia	10,00%	30,00%	30,00%	30,00%
Basque Country	21,43%	14,29%	28,57%	35,71%
Flanders	22,22%	11,11%	33,33%	33,33%
North Rhine-Westphalia	0,00%	50,00%	30,00%	20,00%
Piedmont	10,00%	60,00%	10,00%	20,00%
Total	**13,21%**	**32,08%**	**26,42%**	**28,30%**

Annex table 14. Recoded answers to "Can you explain what elements you took into consideration to select the type of innovation above?"

	Innovation as exploration	Innovation as new activities	Innovation as solutions
Catalonia	30,00%	10,00%	60,00%
Basque Country	14,29%	21,43%	64,29%
Flanders	22,22%	11,11%	66,67%
North Rhine-Westphalia	44,44%	22,22%	33,33%
Piedmont	0,00%	30,00%	70,00%
Total	**21,15%**	**19,23%**	**59,62%**

Annex table 15. Recoded answers to "What needs does your project answer to? What are the reasons for developing this innovation?"

	Cultural	Economic	Education	Enviornmental	Health service	Social	Urban
Catalonia	40,00%	20,00%	20,00%	10,00%	0,00%	10,00%	0,00%
Basque Country	21,43%	28,57%	7,14%	7,14%	0,00%	21,43%	14,29%
Flanders	11,11%	44,44%	0,00%	11,11%	11,11%	22,22%	0,00%
North Rhine-Westphalia	0,00%	44,44%	11,11%	11,11%	0,00%	0,00%	33,33%
Piedmont	40,00%	10,00%	20,00%	0,00%	10,00%	0,00%	20,00%
Total	**23,08%**	**28,85%**	**11,54%**	**7,69%**	**3,85%**	**11,54%**	**13,46%**

Annex table 16. Recoded answers to "How did you introduce this innovation in the project? Please describe the process or methodology"

	Collaboration	Own knowledge and research	User experience
Catalonia	40,00%	40,00%	20,00%
Basque Country	33,33%	41,67%	25,00%
Flanders	22,22%	44,44%	33,33%
North Rhine-Westphalia	44,44%	22,22%	33,33%
Piedmont	44,44%	44,44%	11,11%
Total	**36,73%**	**38,78%**	**24,49%**

Annex table 17. Answers to "What's the impact of your company or project?" From 1 (low) to 5 (high)

	Economic impact	Social impact	Environmental impact
Catalonia	4,11	4,11	3,86
Basque Country	3,93	4,62	3,85
Flanders	4,25	4,13	3,38
North Rhine-Westphalia	3,00	4,33	3,33
Piedmont	3,00	4,40	2,50
Total	**3,66**	**4,35**	**3,42**

Annex table 18. Answers relative to EIS knowledge

	Are you familiar with the European Innovation Scoreboard (EIS)?		Have you ever filled out its questionnaire?	
	No	**Yes**	**No**	**Yes**
Catalonia	100,00%	0,00%	100,00%	0,00%
Basque Country	85,71%	14,29%	100,00%	0,00%
Flanders	100,00%	0,00%	100,00%	0,00%
North Rhine-Westphalia	90,00%	10,00%	100,00%	0,00%
Piedmont	100,00%	0,00%	90,00%	10,00%
Total	**94,34%**	**5,66%**	**98,11%**	**1,89%**

Annex table 19. Answers to "Can you please evaluate the following EIS indicators (from least, 1, to most relevant, 5) for the measuring of innovation in the cultural and creative industries?"

Newly graduated PhDs (% group 25-34 years)	3,08
Percentage of population between 25 and 34 years of age with tertiary education	3,6
Percentage of population from 25 to 64 years old participating in lifelong learning	3,35
International scientific co-publications per million inhabitants	3,18
Scientific publications among the top 10% most cited internationally as a percentage of the total of scientific publications in the country	3,12
PhDs from outside the EU as a percentage of the total number of PhDs in the country	3
Broadband penetration	3,71
Entrepreneurship boosted by the opportunities (motivational index)	4,05
Public expenditure on R&D as % of GDP	4,15
Venture capital as % of GDP	3,58
Private expenditure on R&D as % of GDP	3,89
Expenditure on non-R&D innovation as % of the total business figure	3,59
Provision of training for businesses to develop or update the ITC skills of their staff	3,76
Small and medium-sized businesses who are innovators in product or process as % of small and medium-sized businesses	4,28
Small and medium-sized businesses who are in marketing or organisation as % of small and medium-sized businesses	3,45
Small and medium-sized businesses with internal innovation as % of small and medium-sized businesses	4,02
Small and medium-sized businesses who collaborate with others as % of small and medium-sized businesses	3,94
Public-private co-publications per million inhabitants	3,13
Private co-financing of public expenditure on R&D	3,72
PCT patent applications per billion of GDP (in PPP euros)	2,97
EU commercial brands per billion of GDP (in PPP euros)	2,97
EU designs per billion of GDP (in PPP euros)	3,33
Employment in knowledge-intensive activities as a % of total employment	3,87
Employment in companies in innovative rapid growth sectors	3,85
Exports of medium and high technology products	3,63
Exports of high knowledge level services as % of the total of service exports	3,78

Sales of innovative products new to the market and to the company as % of business amount	3,82

Annex table 20. Average relevance and % of "Not clear" per dimensions

		Average relevance (1-5)	Average % of "not clear"
Framework Conditions	1.1. Human resources	3,34	10,06%
	1.2. Attractive research systems	3,1	18,24%
	1.3. Environment open to innovation	3,88	19,81%
Investments	2.1. Financing and support	3,87	20,75%
	2.2. Business investments	3,67	18,24%
Innovation activities	3.1. Innovators	3,92	13,84%
	3.2. Links	3,6	15,09%
	3.3. Intellectual assets	3,09	31,45%
Impacts	4.1. Impacts on employment	3,86	14,15%
	4.2. Impacts on sales	3,74	15,09%