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TERRITORIAL SERVITIZATION: LEARNINGS FROM BASQUE COUNTRY AND RUHR VALLEY

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Executive Summary

European post-industrial regions, grappling with the consequences of deindustrialization, face significant structural and economic challenges that undermine their competitiveness. In their search for new pathways to economic recovery and growth, **the concept of Territorial Servitization (TS) – the integration of Knowledge-Intensive Business Services (KIBS) into the industrial fabric – has emerged as a promising strategy for fostering regional economic transformation for higher industrial competitiveness**. TS aims to shift these regions from traditional manufacturing to more service-oriented, knowledge-driven economies and industry. However, the transitions necessary to achieve TS are **context-specific** and complex, as KIBS do not integrate seamlessly into the fragmented economic landscapes of post-industrial regions. Network failures can further impede the development of strong linkages between KIBS and industry.

The Basque Country and the Ruhr Valley are regions that have experienced industrial decline and are actively seeking to reshape their economic structures. Analysis of quantitative and qualitative data gathered from local stakeholders via interviews, focus groups and workshops enabled a comparison of the approaches of both regions to TS and the identification of recommendations for policy action that could benefit not only these two regions but also other post-industrial areas across Europe.

Comparative Analysis of TS in the Basque Country and the Ruhr Valley

Both the Basque Country and the Ruhr Valley **recognize TS as essential to their economic transformation, though their approaches diverge significantly**. The Basque Country follows a more structured, policy-driven strategy with strong institutional coordination, while the Ruhr Valley's transition has been more gradual, driven by evolving policies and increasing service-sector engagement. The Basque model ensures strategic alignment but faces some resistance from conservative industrial mindsets, whereas the Ruhr Valley, despite institutional fragmentation, benefits from a robust research landscape and a growing specialization in certain sectors. Both regions face common challenges related to talent retention, cross-sector collaboration, and the integration of KIBS but offer valuable insights for advancing TS.

Table 1. Comparison of TS approaches in the Basque Country and the Ruhr Valley

	Basque Country	**Ruhr Valley**
Geographic and Regional Identity	-Strong regional identity and political autonomy enable stable governance. -Limited multilevel collaboration hinders broader territorial strategies.	-Polycentric structure fosters economic dynamism. -Challenges in regional coordination and branding.

Industrial and Business Culture	-Firms prefer proven solutions, slowing the adoption of service innovations. -Institutional mechanisms support gradual KIBS integration.	-Pragmatic business culture with varying KIBS adoption levels. -Decentralized collaboration; emerging networks and hubs.
TS Policymaking and Public Actors	-TS embedded in economic strategy (e.g., smart specialization). -Active policymaking promotes collaboration; some debate over public sector's role.	-Decentralized and flexible policy landscape. -No unified TS strategy; focus on attracting KIBS and linking industry with research.
Intermediary Organizations	-Cluster associations and development agencies foster structured collaboration.	-Traditionally passive intermediaries. -Recent efforts to strengthen business networks and knowledge transfer.
Universities and Research Integration	-Strong, structured academia-industry collaboration, supported by policy incentives.	-Dense university network, but fragmented industry integration. -Increasing institutionalized partnerships, especially in IT security and green tech.
Talent Retention and Attraction	-Strong industrial base and urban strategies help with retention. -Still faces challenges in expanding the talent pool.	-More pronounced brain drain. -Investing in research centers and ecosystems to boost the knowledge economy.

Recommendations for Policy

Based on the comparative analysis of the two regions, the following policy recommendations are formulated to strengthen TS in post-industrial regions across Europe. These strategies, though derived from the Basque Country and Ruhr Valley cases, are broadly applicable to any region aiming to integrate knowledge-intensive services into its economic/industrial fabric.

1. Increasing KIBS Visibility and Participation

KIBS remain underutilized in industrial transformation due to low awareness. Policymakers can increase their visibility through structured initiatives such as KIBS catalogues, networking events, and strategic communication campaigns. The Basque Country leverages advanced manufacturing networks' collaboration, while the Ruhr Valley faces challenges due to its logistics-dominated service sector.

2. Creating Platforms for Stakeholder Connection

Industrial firms struggle to integrate KIBS due to cultural and structural gaps. Joint problem-solving workshops, digital matchmaking platforms, and financial incentives can encourage

collaboration. The Ruhr Valley, with its reliance on standardized services, could benefit from sector-specific platforms.

3. **Embracing Innovation and Collaboration Culture**

Traditional business models hinder service-led innovation. Awareness campaigns, leadership training, and fostering a culture of continuous learning can drive change. The Ruhr Valley's risk-averse business culture slows TS adoption down, while the Basque Country needs stronger KIBS-industry collaborations. Fostering cross-sector collaboration could be a source of innovation in the two regions.

4. **Attracting and Retaining Workforce**

Talent retention is a challenge in both regions. Collaborative employment initiatives, career development programs, and incentives for skilled workers are crucial. While the Ruhr Valley struggles with brain drain, Bilbao and the Basque Country are developing skills ecosystems to address skills mismatches, and efforts to attract talent are underway. However, the coordination of different skills policies remains a challenge.

5. **Integrating Governance Efforts**

Multi-level governance is key to the long-term success of TS. The Ruhr Valley requires enhanced coordination among regional policymaking bodies, while the Basque Country should focus on improving cross-territorial coordination including the different urban strategies. Interregional learning across post-industrial regions can facilitate the sharing of best practices.

6. **Strengthening Intermediaries**

Intermediaries like cluster associations and innovation hubs help bridge the gap between firms and KIBS, but their effectiveness varies. In both regions, mapping, capacity-building, accountability and private-sector involvement could enhance the impact of these intermediaries.

7. **Increasing Proactivity in Policymaking**

Proactive policies, such as living labs or regulatory sandboxes and pilot projects, can accelerate TS adoption. The Ruhr Valley's reactive approach contrasts with the Basque Country's structured, long-term planning.

8. **Institutionalizing and Enforcing Strategies**

A formalized TS strategy should integrate KIBS into industrial competitiveness plans. Smart specialization strategies, impact assessments, and continuous policy adjustments are essential for ensuring the long-term sustainability of TS.

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C-KIBS	Creative KIBS
EU-27	The 27 member states of the European Union
GDP	Gross Domestic Product
ICT	Digital transformation acitivities
KIBS	Knowledge-Intensive Business Services
NACE	Nomenclature statistique des activités économiques dans la Communauté européenne
NRW	North Rhine-Westphalia
PCTI 2030	Science, Technology, and Innovation Plan 2030
P-KIBS	Professional KIBS
PPP	Purchasing Power Parity
R&D	Research and Development
SME	Small and medium-sized enterprise
TerriServ	Understanding and Engaging in Territorial Servitization in the Basque Country and the Ruhr Valley
T-KIBS	Technological KIBS
TS	Territorial Servitization

1. Introduction

Post-industrial regions across Europe, such as the Ruhr Valley in Germany and the Basque Country in Spain, have undergone significant transformations over the last few decades. Traditionally, these regions were industrial powerhouses, heavily reliant on sectors like coal mining, steel production, and heavy manufacturing. The Ruhr Valley, for instance, was the heart of Germany's coal and steel industries for much of the 19th and 20th centuries, supporting not only local economies but also serving as a critical engine of national growth. Similarly, The Basque Country in Spain was known for its robust industrial base, with a particular emphasis on shipbuilding, metallurgy, and automotive manufacturing. However, the latter half of the 20th century brought a series of disruptive changes that reshaped the economic landscape of these regions. Globalization led to increased competition from lower-cost producers in Asia and other parts of the world, making it difficult for European manufacturers to maintain their competitiveness. Advances in technology and automation further accelerated the decline of traditional industries, while environmental regulations and the global shift toward sustainable energy sources challenged the viability of coal mining and heavy manufacturing. These factors led to the **deindustrialization of many of Europe's traditional industrial regions**, causing profound economic, social, and structural challenges. The closure of factories and mines resulted in significant job losses, particularly among low- and medium-skilled workers, contributing to high unemployment rates and increased social inequality. Infrastructure that was built around heavy industry became underutilized or obsolete, and local supply chains were disrupted. These changes also affected the industrial identity of these regions, as they struggled to reinvent themselves after the economy declined

Amid these challenges, regions like the Ruhr Valley and the Basque Country began exploring new avenues for economic recovery and development. A key strategy emerging from these efforts has been the focus on Servitization – the transformation from a purely product-oriented model to one that emphasizes the provision of services. However, to achieve a more comprehensive and sustainable transformation at the regional level, **the concept of Territorial Servitization (TS) has gained prominence.**

TS is a concept that focuses on the territorial **integration of manufacturing firms and Knowledge-Intensive Business Services (KIBS).** It **leverages the synergistic relationship** between these two sectors to create dynamic, innovative, and competitive regional economies. As defined by Lafuente et al. (2017), TS involves the creation of strong regional ecosystems by pooling the complementary core competencies of manufacturers and KIBS providers, leading to employment generation, knowledge exchange, and increased territorial competitiveness. The essence of TS lies in its ability to foster "symbiotic and strong interactions" between KIBS providers and the manufacturing sector.

KIBS, namely firms offering specialized services such as engineering, IT, consultancy, and R&D, play a critical role in supporting innovation, efficiency, and competitiveness within manufacturing companies. For example, KIBS can help traditional manufacturers adopt new

digital technologies, optimize production processes, or develop new business models that incorporate service elements.

However**, the implementation of TS is not straightforward**. While there is ample evidence that KIBS can enhance the competitiveness of industrial companies, **the relationship between these entities does not always develop organically**. Research indicates that network failures – situations where potential partners do not connect due to lack of visibility, different operational logics, or other barriers – can hinder the development of strong KIBS-industry linkages (Block et al., 2020; Gustafsson and Autio, 2006). In this context, policy actions become critical in fostering an environment where such interactions can thrive, by addressing these barriers and incentivizing collaboration. The concept of TS provides a promising framework for regional development, particularly for post-industrial regions in Europe that seek to transform their economies. However, **understanding the specific dynamics that enable or hinder TS, and identifying the role of policy and other stakeholders** in this process requires a nuanced, context-sensitive approach. This is precisely what the TerriServ project and this report aimed to achieve.

The TerriServ project, titled "Understanding and Engaging in Territorial Servitization in the Basque Country and the Ruhr Valley," was initiated to explore the dynamics of TS and identify actionable strategies to support its implementation in post-industrial regions. Motivated by the need to find sustainable pathways for economic regeneration, the project focused on two key European regions – the Basque Country in Spain and the Ruhr area in Germany – both of which have experienced significant industrial decline and are actively seeking to transition to more knowledge-intensive, service-oriented economies. The project was carried out within the framework of UNIC – the European University of Post-Industrial Cities – an alliance of ten European universities located in post-industrial cities, including the University of Deusto and Ruhr University Bochum (www.unic.eu/en).

The project had several key objectives that were addressed with distinct methodological approaches to lay a meaningful groundwork for the following objectives:

1. Understand the current data on TS: To establish a baseline understanding of the current state of TS in both regions, the project began with a comprehensive **desk study**, analyzing existing literature, reports, and secondary data. Such data included various nation-, state- and region-level statistics gathered from publicly organized agencies. Their analysis provided insights into the extent to which TS was already occurring, the factors driving or inhibiting it, and the role played by various regional actors, enabling a fundamental assessment of how the transformation has begun and evolved in the respective regions. With these quantitative insights, an initial comparison of developments of both regions was conducted.

2. Understand the perspectives of key stakeholders: Based on the understanding of how the transformations progress from a bird's-eye-perspective, another crucial aspect of the project was engaging with **local stakeholders** – including policymakers, business leaders, KIBS providers, and manufacturing firms – to gather qualitative insights into their perceptions of TS and the factors influencing its success or failure on a micro-level. Through interviews, focus group discussions and workshops, the project aimed to capture the diverse perspectives of

those directly involved in or impacted by TS. The process of qualitative data collection was carried out between September 2023 and May 2024 in the Basque Country and Ruhr Valley.

3. Compare the two regions: Using both quantitative and qualitative findings the project sought to highlight similarities and differences between the Basque Country and the Ruhr Valley in their approaches to TS, the role of KIBS, and the specific challenges and opportunities present in each region. This comparative approach allowed for the identification of context-specific factors that could influence the success of TS initiatives and the conceptualization of a taxonomy of policy attitudes towards TS with matching missions and employed measures, but very distinct visions of the future economic landscape in both regions.

4. Define policy recommendations: Finally, based on the findings from the research, the project aimed to develop concrete **recommendations and policy actions** for/with policymakers and managers to support and enhance TS efforts in their regions. These recommendations were designed to address the specific challenges, stakeholder configurations and political visions identified in each region and to build on the good practices observed.

The empirical setting of the TerriServ project focused on **two regions that, while sharing a similar history of industrial decline**, have unique characteristics and approaches to regional development: The Basque Country has long been an industrial hub in Spain, with a strong focus on manufacturing sectors such as metallurgy, and automotive production. However, in recent decades, it has faced significant economic restructuring. The Basque Government has actively pursued strategies to diversify the economy, emphasizing innovation, technological development, and the growth of KIBS to support the remaining industrial base. The Basque Science, Technology and Innovation Plan is an example of these strategies. Likewise, urban governments such as City Councils from Bilbao and San Sebastian have fostered specific competitiveness strategies for KIBS.

The Ruhr Valley, known as the "coal and steel heartland" of Germany, has similarly experienced a decline in its traditional industries. Policymakers have increasingly focused on fostering a more diversified economy, with investments in sectors such as IT, healthcare, and renewable energy. The region's large metropolitan area and dense network of educational institutions provide a fertile ground for the growth of KIBS.

To provide a comprehensive overview of the findings from the **TerriServ project**, this report is structured as follows: Chapter 2 will delve into the conceptual underpinnings of TS and the role of KIBS in regional economic development. It will outline both academic and practical definitions of KIBS, drawing from existing literature to provide a theoretical framework for understanding TS. Building upon that, Chapter 3 will present an analysis of the current state of TS in the Basque Country and the Ruhr Valley. This includes quantitative data on regional economic indicators, the presence and growth of KIBS, and an examination of the industrial landscape in both regions. It also provides a comparative analysis to highlight the similarities and differences between the two settings. With the quantitatively gathered data in mind, Chapter 4 will present the empirical findings from stakeholder interviews and focus groups, exploring the mechanisms driving TS and the policy strategies in the two regions. This chapter examines how different stakeholders perceive TS, the strategies employed by policymakers,

and the dynamics between KIBS and manufacturing firms. In the case of the Basque Country, the qualitative analysis builds on data collected within the scope of a project launched by Bilbao Ekintza, the economic development agency of Bilbao. As it is described later, this project provided the framework for implementing the planned actions within TerriServ project. Chapter 5 includes specific recommendations for policymakers, aiming to foster stronger KIBS-industry linkages, enhance policy frameworks, and support the overall goals of TS in post-industrial regions. Building on insights from our two case regions, we also derive more general actionable insights to drive TS in post-industrial regions across the whole of Europe.

By structuring the whitepaper in this manner, we aim to provide a holistic understanding of TS as a concept, its status in two diverse regions, and the specific actions required to support its further development.

2. Theoretical Background

2.1. KIBS

The concept of Knowledge Intensive Business Services (KIBS) refers to companies whose business model is based on the creation, accumulation and dissemination of knowledge (Miles et al., 2018). While there is no single generally accepted definition of KIBS, the analysis contained in this report defines KIBS as firms that provide knowledge-intensive inputs to the production and business processes of other companies (industrial or service).

Building on the definition provided above, to clarify the concept of KIBS, it is necessary to unpack the characteristics of such firms:

- **Knowledge-intensive**: A defining characteristic of KIBS is the reliance on specialized knowledge, expertise, and intellectual capital. Although this specialized knowledge can also be stored in knowledge assets (Starbuck, 1992), the knowledge base of KIBS most commonly relies on highly skilled experts or professionals. KIBS build solutions based on their knowledge and expertise, but the outcomes generated involve the development of new knowledge in the form of new standards, new procedures, improvements in production processes and new answers. These services are in turn integral to the development of new products, services, or business models for their clients and are essential to industries undergoing technological or organizational transformation.
- **Business**: KIBS provide services to other businesses and organizations rather than to end customers. More specifically, KIBS apply their expert knowledge to resolve the business problems of their clients. For this, KIBS need to understand the often complex nature of their client's challenges, which requires dialogue, communication and the building of trust-based relationships (Skjølsvik, 2016). Consequently, services provided tend to be customized to the specific needs of their clients and are often co-created together with these clients. In such a relationship, KIBS and their clients tend to see each other as partners in the co-creation of value, and share knowledge, insights or data to contribute to the tailor-made solutions. In sum, KIBS are **customized** for and **co-created** with business clients.
- **Services**: although the term service is also ambiguous, a common characteristic of existing definitions is its intangible nature, namely that its acts or activities do not result in the ownership of tangible products. The intangible nature of services makes services difficult to evaluate in terms of quality (a concept referred to as "opaqueness of quality" (Løwendahl, 2005), leaving companies to rely on clients' subjective satisfaction of the solution provided to address the initial problem they faced. Therefore, the intangible nature of KIBS reinforces further the link between provider and client and underlines the need to focus on the nexus between KIBS and industry in TS.

These characteristics highlight the importance of KIBS in enhancing productivity, fostering innovation, enabling the digital transformation of businesses, and driving regional competitiveness.

- KIBS **contribute to productivity enhancement across various sectors** by offering tailored solutions that address complex business challenges. The expertise provided by KIBS allows firms to optimize operations, improve decision-making processes, and streamline supply chains. Through the integration of advanced technologies and sophisticated management strategies, KIBS help businesses achieve higher efficiency, reduce costs, and improve overall performance (Miles, 2005).
- KIBS are key **drivers of innovation for companies** (Shearmur & Doloreux, 2013). As knowledge-based services are at the core of technological and organizational advancements, KIBS facilitate the development and dissemination of new ideas, products, and processes. These services support firms in their R&D activities, provide market intelligence, and assist in the commercialization of innovations. Moreover, KIBS often act as **intermediaries between academic research and industry applications**, helping translate theoretical knowledge into practical, real-world solutions. This symbiotic relationship between KIBS and innovation ecosystems contributes to economic dynamism and competitive advantage at both firm and national levels.
- Furthermore, KIBS are **instrumental in the digital transformation of economies**. By offering services that support digitalization, KIBS enable businesses to stay competitive in increasingly globalized and technology-driven markets. The expertise embedded in KIBS helps organizations leverage digital tools to enhance customer experiences, improve product offerings, and refine business models (Belousova et al., 2022).
- KIBS also play a **critical role in regional competitiveness**. By fostering the growth of knowledge-intensive sectors, KIBS contribute to the diversification of local economies and the creation of high-value employment opportunities. Knowledge-intensive activities tend to cluster in urban and technologically advanced regions, which can lead to the formation of innovation hubs and knowledge clusters. These hubs attract skilled labor, facilitate the exchange of knowledge and ideas, and foster collaboration among firms, universities, and research institutions. As such, KIBS are central to the development of knowledge economies, which are increasingly seen as key to achieving sustainable and inclusive growth (Shearmur, 2017).

The classifications used in many studies about KIBS frequently follow the NACE scheme, a standardized European system for categorizing economic activities that helps in systematically organizing industries and sectors for statistical, regulatory, and policy purposes. We follow the classification developed by Miles et al. (2018) to use in this report.

Table 1 KIBS classification

Professional KIBS	Technological KIBS	Creative KIBS
NACE 69: Legal, law, accounting, consulting, activities	NACE 71: Architectural and engineering activities: technical testing and analysis	NACE 73: Advertising and market research
NACE 70: Activities of head offices: management consultancy activities	NACE 72: Scientific research and development	
NACE 74: Other professional, scientific and technical activities		

Source: adapted from Miles et al. (2018)

- **Professional KIBS (P-KIBS)** include the activities corresponding to NACE 69, 70 and 74. Their focus is primarily on professional expertise, legal or regulatory compliance, and advisory services that improve internal organizational structures or processes. Their expertise often revolves around human-intensive knowledge applied in non-technological domains. Their services are often essential for business operations, ensuring compliance, and improving organizational processes. Examples: law firms offering corporate legal advice, intellectual property services, or contract drafting; firms providing tax consultancy, financial auditing, and bookkeeping services; companies advising on strategy, organizational change, or market entry strategies.
- **Technological KIBS (T-KIBS)** include the activities corresponding to NACE 71 and 72. These firms specialize in technology-driven services and solutions, helping businesses with engineering, R&D, and IT-related needs. Their services are more reliant on technical and scientific expertise. Examples: services in construction design, process optimization, or sustainable engineering; custom software development, systems integration, and IT infrastructure support; research projects for product innovation or technological advancement.
- **Creative KIBS (C-KIBS)** include the activities corresponding to NACE 73 and 74. Their focus lies in the creative and aesthetic aspects of business services. They bridge innovation with branding, communication, and design, often supporting firms in reaching and engaging their audiences. Examples: designing ad campaigns, brand strategies, and promotional materials; conducting surveys, focus groups, and customer behavior analysis; creating product packaging, UX/UI design, and visual identities for businesses.

There are two types of territories where KIBS tend to thrive (Corrocher and Cusmano, 2014). On the one hand, the role of KIBS is particularly relevant in territories with a high concentration

of industrial activities, since their competitiveness depends on a high concentration of industrial activities. On the other hand, some studies have shown that KIBS, as activities that are highly sensitive to the positive effects of agglomeration economies, tend to be concentrated in urban environments and metropolitan areas.

2.2. Territorial Servitization

TS refers to the **phenomenon of manufacturing companies and KIBS collaborating in working towards a renaissance of manufacturing competitiveness** within regions of developed economies (Lafuente et al., 2017; Vendrell-Herrero et al., 2020). This transition involves the increasing prominence of service industries in the local economy, with a particular emphasis on KIBS that contribute to regional development and economic transformation. TS is not only about the proliferation of services but also about how these services, especially those based on advanced knowledge and technology, are integrated into the regional economic fabric, enhancing the productivity and competitiveness of the entire territory.

The literature on TS is significant for regional studies for example, in cluster policy or industrial districts (Aranguren et al., 2014) and the introduction of KIBS companies in these clusters (Bellandi and Santini, 2019; Lafuente et al., 2019). Additionally, it adds to the growing body of work on how **knowledge-based sectors play a crucial role** in generating employment and driving the economic and social development of cities and regions (Lafuente et al., 2017; Kamp & Ruiz de Apodaca, 2017).

The concept of TS goes beyond the simple expansion of service sectors; it involves a **restructuring of regional economic activities** where services play a crucial role in value creation, innovation, and the enhancement of local capabilities. The growing importance of service industries, particularly knowledge-intensive services, often contributes to the diversification of the regional economy, driving new growth trajectories and reshaping the competitive advantages of territories. Particularly in Europe, over the last three decades, the number of KIBS has drastically risen due to both increased inter-industry linkages and the attempts of European economies to consolidate their knowledge-based economies (Horváth & Rabetino, 2019).

TS is generally assumed to hold critical importance for post-industrial regions and their economic landscape for several key reasons:

1. **Innovation and knowledge diffusion among territorial actors**: Services, particularly KIBS, are central to innovation processes. They often facilitate the transfer of knowledge from research institutions and academia to industry, contributing to the development of new technologies, products, and business models. In this way, TS helps transform regional economies into knowledge-based economies, where service sectors play a central role in fostering technological and organizational innovation (Seclen et al., 2023).
2. **Cross-border knowledge transfer**: successful KIBS specializing in the generation of complex knowledge-based solutions for their clients are likely to follow their manufacturing clients into international markets (Minondo, 2016), where they

subsequently also serve international clients. The knowledge acquired and generated in international markets can then be transferred and applied in the home territory (O'Higgins et al, 2022).

3. **Regional competitiveness**: In an increasingly globalized world, regions that can leverage service-based sectors effectively can enhance their competitiveness. TS enables regions to differentiate themselves by developing specialized service clusters, such as finance, IT, and consulting, which can attract investment and talent. This leads to the creation of superior territorial resilience, manufacturing renaissance and competitiveness, as well as regional development (Vendrell-Herrero & Wilson, 2017; Lafuente et al., 2017, 2019).

4. **Job creation and skills development**: Service sectors, particularly those focused on high-value, knowledge-intensive activities, create employment opportunities that require higher levels of education and specialized skills. TS can help regions shift towards creating skilled jobs, reducing unemployment, and addressing skills gaps in the local labor market. This process is especially important in regions where traditional industries have declined, as it offers new avenues for workforce development (Seclen et al., 2023).

5. **Place-Based economic transformation**: TS contributes to the transformation of local economies by creating service clusters or hubs (Aranguren et al., 2014), often in urban areas or regions with strong university-industry links. These hubs attract talent, foster collaboration between firms and research institutions, and create ecosystems that promote sustained economic development (Horváth & Rabetino, 2019).

We consider that the Basque Country and the Ruhr area are suitable regions to analyze the dynamics that emerge between KIBS and industry. Furthermore, these regions provide valuable contexts for exploring policy opportunities and approaches to drive TS. In the next section we characterize the two territories analyzed in this report: the Basque Country and the Ruhr Valley.

3. Status-Quo of Territorial Servitization

This chapter analyzes the current state of TS in the Basque Country and the Ruhr Valley and is based on a range of data sources to provide a comprehensive overview of both regions. Quantitative data on regional economic indicators, the presence and growth of KIBS, and an examination of the industrial landscape are presented. Additionally, a comparative analysis highlights the similarities and differences between the two settings. The analysis draws on public, private, and academic reports, as well as newspaper articles. Public reports, including those from the state of North Rhine-Westphalia (NRW)[1], NRW Bank[2], Regionalverband Ruhr[3], the Ruhr Economic Development Agency[4] and the German Federal Environmental[5] and Statistical Offices[6], provide key insights into the Ruhr Valley and enable comparisons on state, national and European level. Private reports from different representatives of startups[7,8], and private research institutes[9] contribute perspectives on emerging trends and sectoral developments. Academic reports, notably from Orkestra (Orkestra, 2024[10]), offer detailed data and conceptual frameworks specific to the Basque Country. Likewise, the Orkestra's Regional Competitiveness Observatory[11] and the Basque Statistical Office-EUSTAT[12] serve as the primary quantitative data sources for analyzing the Basque Country. These diverse sources ensured a nuanced and well-rounded understanding of the regions' current competitiveness situations, combined with details on industrial and KIBS landscapes, as laid out in following paragraphs.

[1] https://www.statistik.nrw/wirtschaft-und-umwelt/

[2]https://www.nrwbank.de/export/.galleries/downloads/Regionalwirtschaftliche-Profile/2022/NRW.BANK.Regionalprofil-Ruhrgebiet-2023.pdf

[3] https://www.statistikportal.ruhr/

[4] https://www.business.ruhr/ueber-uns/projekte/wirtschaftsbericht-ruhrgebiet-2023.html

[5] https://www.umweltbundesamt.de/publikationen/analyse-des-historischen-strukturwandels-im-0

[6] https://www.dashboard-deutschland.de/#/

[7] https://www.rag-stiftung.de/publikationen/innovationsreport-ruhr/

[8] https://startupverband.de/research/weitere-reports/innovationsoekosystem-ruhr/

[9]https://www.iwkoeln.de/fileadmin/user_upload/Studien/Gutachten/PDF/2018/IW-Gutachten_Zukunft_des_Ruhrgebiets.pdf

[10] https://www.orkestra.deusto.es/en/publications-search/basque-country-competitiveness-report

[11] https://www.orkestra.deusto.es/competitiveness-observatory/en

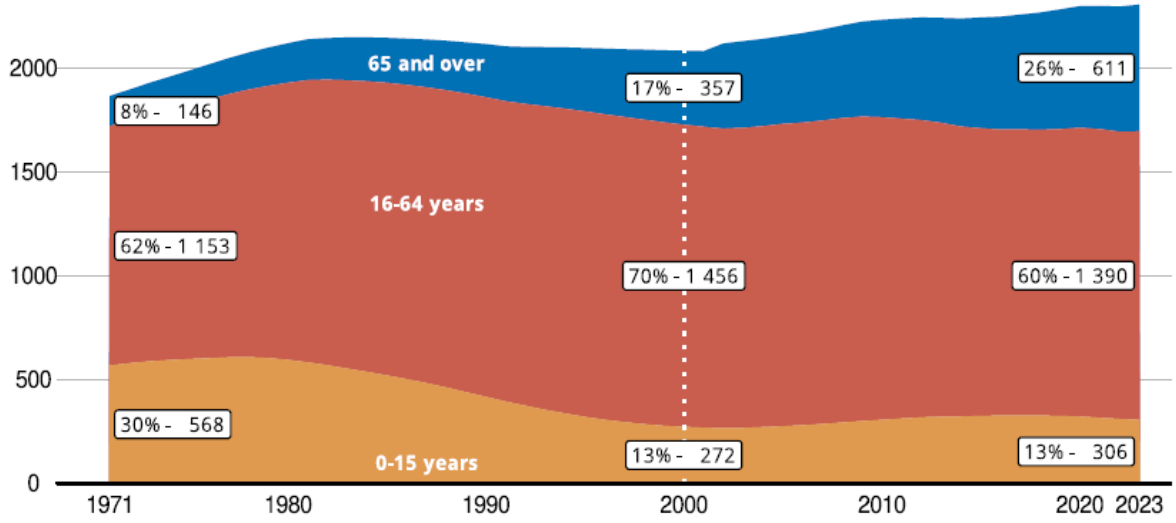
[12] https://en.eustat.eus/indice.html

3.1. In the Basque Country

The term "Basque Country" in this report refers to the Autonomous Community of the Basque Country, one of the 17 autonomous communities of Spain. This region, located in the north of the country, consists of three provinces: Araba, Gipuzkoa, and Bizkaia. The Basque Country has a distinct cultural and linguistic identity, with Basque (Euskera) being an official language alongside Spanish. In addition to its cultural diversity, it is an economically significant region, known for its strong industrial sector, technological innovation, and specialization in advanced industries.

The **population of the Basque Country** as of 2024 is 2,208,007, with a **population density** of 309 inhabitants per square kilometer. The high ageing rate, however, is one of the competitiveness challenges of the region. Since the 1970s, although the proportion of people of working age is similar, the high percentage of young people has been replaced by a larger group of older people. Consequently, the structure of the working-age population has also changed.

Figure 1 Evolution of the population of the Basque Country by major age groups (thousands of people, 1971-2023)



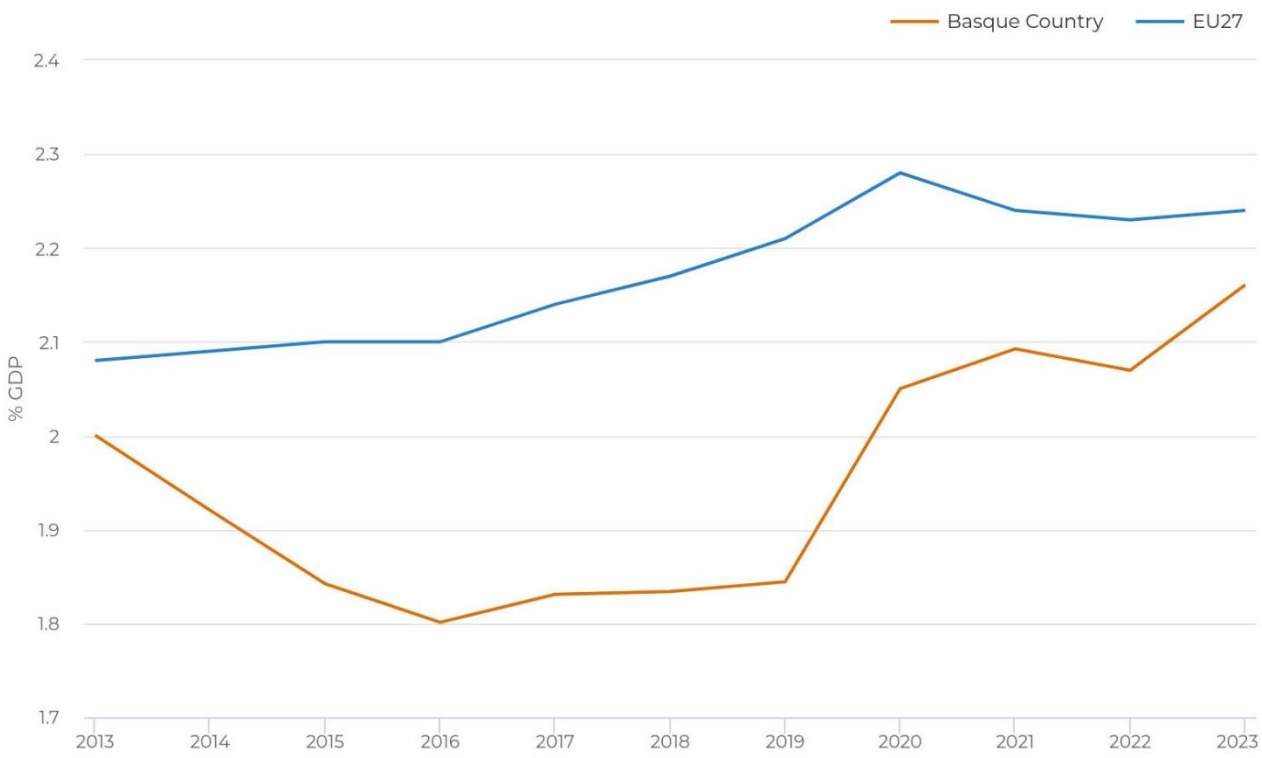
Source: Orkestra Basque Competitiveness Report (2024)

The changes seen in the age structure have not only been driven by changes in birth and death rates. Migratory flows have also played a major role and are changing the structure of the population in another fundamental aspect: the origin of the people. Although there have always been migratory flows in the Basque Country, until the beginning of this century the people arriving in the Basque Country came mainly from the rest of Spain. Nowadays, the population has grown due to the continued increase in **people of foreign origin**, who accounted for 13.5% of the total population in 2024.

The Basque Country's economic and business competitiveness remains very robust overall. In the years since the pandemic, the Basque Country's **GDP per capita** (€45,574 in PPP in 2024) has widened its positive gap with the European average (114%) and maintains a similar gap with Spain (125 %). This performance is marked by improvements in **productivity,** both in the economy as a whole (46.6€/hour in 2022) and in the manufacturing sector (50.59€/hour in 2022), resulting in a reduction in **unit labor costs** (59.06% per employed person and 58.21% per employed person in manufacturing in 2022) and an improvement in corporate profitability.

Total R&D expenditure as a percentage of GDP was 2.2% in 2023, matching the EU-27 average, while business R&D accounted for 77.2% of the total.

Figure 2 R&D expenditure in % of GDP in the Basque Country (2013-2023)



Source: Regional Competitiveness Observatory

The evolution of the **unemployment rate** (8.1% in 2024) also shows improvements. While this rate is still above the EU-27 average (5.9%), the gap is narrowing year after year. With respect to overall material living standards, the Basque Country (€19,920) continues to rank above the EU-27 (€19,089) in the key indicator of **median equivalized household income**. The per capita net disposable income was €23,400 per inhabitant in 2022, compared to €19,400 per inhabitant in the EU-27.

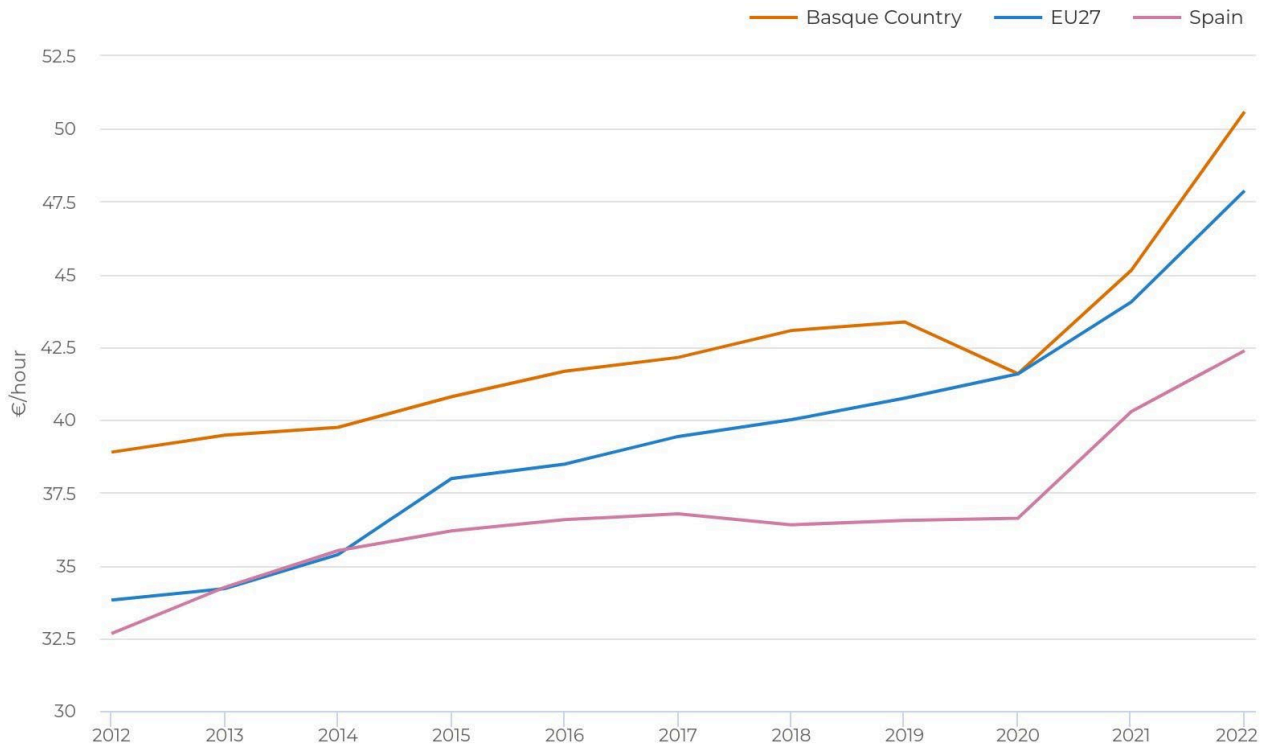
Historically, science, technology, and innovation actors have been instrumental in shaping the Basque Country's regional competitiveness by driving industrial modernization, fostering knowledge transfer, and nowadays, supporting the regional smart specialization strategy. The Basque Country counts, for example, **four universities:** University of the Basque Country, the University of Deusto, the University of Mondragon and TECNUN, the University of Navarra's engineering school. These universities cover a range of disciplines, but have a strong focus on engineering, technology, business and innovation and ties to industry. Moreover, these universities collaborate closely with the region's KIBS, not least by training the talent that works in them.

3.1.1. Industrial Landscape

In 2024, 184,807 people are **employed in industry** in the Basque Country (19,5% of total employment), and there are 10,566 **industrial companies** (6.4% of all companies). It is important to highlight the gradual changes in the Basque Country's economic structure, with an increasing specialization (compared to Europe) in advanced manufacturing sectors and knowledge economy services, such as KIBS, and a decline in specialization in traditional manufacturing industries. 8.6% of total employment in 2024 was in **high and medium-high technology manufacturing**, while the figure for the EU-27 was 6%. Overall, industrial employment has increased by 8% between 2015 and 2024.

As mentioned earlier, the manufacturing sector also shares the improvements in productivity, reductions in unit labor costs, and increased business profitability that are concluded from the analysis of the entire Basque economy. As the evolution of these variables has been, overall, better than in the EU-27, the distance that the Basque Country maintains above the average in most of the variables has increased; and the gap in terms of manufacturing unit labor costs – which are above those of the EU-27 – has narrowed.

Figure 3 Productivity per hour worked in Manufacturing (2012-2022)



Source: Regional Competitiveness Observatory

3.1.2. KIBS Presence, Employment and Demand

Employment in KIBS in the Basque country has grown since 2014. While 68,252 people were employed in KIBS in 2014, in 2023 this figure had risen to 83,623 (an increase of 22.5%). This growth is mainly attributed to **professional and technological KIBS**. In both cases, the growth is significantly higher than that of the overall Basque labor market (9.3%), indicating the increasing importance of these activities within the labor market.

Moreover, the data demonstrates the urban nature of KIBS. In 2023, the city capitals of the Basque Country (Donostia, Bilbao and Vitoria-Gasteiz) hosted more than 55% of KIBS employment. This percentage reaches 81.2% if the three urban metropolitan areas are taken as a reference. Additionally, the growth of this type of employment since 2014 has primarily occurred in the three capital cities (26.5%).

The **Science, Technology, and Innovation Plan 2030**[13] **(PCTI 2030)** of the Basque Country explicitly aims to **strengthen the role of KIBS** as a key enabler for the region's strategic priorities (smart industry, cleaner energy, personalized health) and areas of opportunity (healthy food, sustainable cities, ecoinnovation, Creative Euskadi). This objective is aligned with

[13] https://www.euskadi.eus/contenidos/informacion/pcti_euskadi_2030/es_def/adjuntos/EUSKADI-2030-STIP.pdf

the broader ambition of enhancing business capabilities, scientific and technological capacities, and market opportunities, as outlined in the Plan's framework. By reinforcing the **integration of KIBS within the local productive fabric**, the PCTI 2030 seeks to foster a more innovation-driven and competitive economy, leveraging KIBS firms as facilitators of knowledge transfer, specialized services, and technological diffusion across industrial sectors. This approach positions KIBS as a **key driver of smart specialization** and sustainable economic growth within the Basque innovation ecosystem.

Moreover, in 2022, an analysis conducted by a consulting firm for Bilbao Ekintza (the economic development agency of Bilbao City Council) aimed to assess the demand for KIBS within the industrial fabric of the Basque Country. The study involved in-depth interviews with 54 Basque industrial companies, providing valuable insights into the services they require and anticipate needing in the near future (in 5 years). The following points summarize the key findings regarding the demand for types of KIBS and specific knowledge areas:

- **Legal and accounting activities**. The most demanded KIBS in this area are labor law, financial auditing, and corporate taxation. In the future, 30% of companies believe the demand for environmental law services will increase.
- **Consulting and business management activities**. The most demanded KIBS in this area are HR, strategic management, and production. In the medium term, companies agree that strategic management and sustainability and environmental management will see an increase in demand.
- **Engineering and architecture activities**. The most demanded KIBS in this area are industrial design, robotics, automotive, and technical engineering services for industry. In the future, 4 out of 10 companies agree that the demand for technical engineering services will continue to grow, along with data engineering and artificial intelligence.
- **Digital transformation activities (ICT)**. The most demanded KIBS currently are ERP management and configuration, cybersecurity, and web development. In the medium term, companies expect the demand for cybersecurity, robotics, automation, and artificial intelligence to increase.
- **R&D activities**. The most demanded R&D services are in advanced manufacturing. In the future, it is expected that the demand for this type of service will remain steady, and the demand for R&D services in energy will increase.
- **Advertising, communication, and market research activities**. The most KIBS are advertising strategy, market research, public relations, and communication. In the medium term, companies expect the current demand behavior to stay the same, with an increase in demand for design and production services.

3.2. In the Ruhr Valley

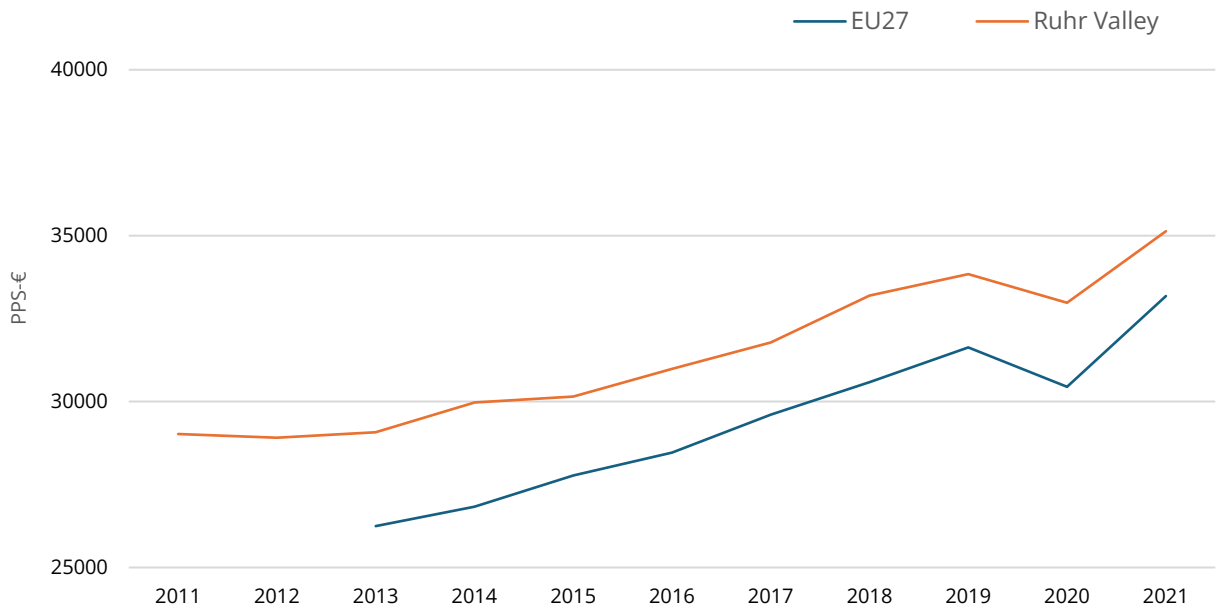
The term "Ruhr Valley" in this report refers to Germany's largest metropolitan region, situated in the federal state of North Rhine-Westphalia (NRW). This region, historically recognized as the heart of Germany's coal and steel industries, is composed of several interconnected cities,

including Dortmund, Essen, Duisburg, and Bochum. The Ruhr Valley has a distinct industrial heritage and cultural significance, marked by its transformation into a post-industrial economy.

The **population of the Ruhr Valley** in 2023 is 5,162,812, with a **population density** of 1,163 inhabitants per square kilometer, making it one of the most densely populated areas in Europe. The population has remained relatively stable, although it has exhibited a slight downward trend since the 1960s. The Ruhr Valley accounts for nearly one-third of NRW's population, despite encompassing only around 10% of its area. The region is home to a diverse demographic profile, with 19.2% of the population in 2023 being of **foreign origin**. While this is roughly comparable to the overall German value, it is far above the European average.

According to the latest economic data, the Ruhr Valley's **GDP per capita** was €35,133 in 2021. This represents a continuous increase over the last 30 years and places the region slightly above the European average but well below the levels of NRW or Germany as a whole. **Productivity** in the Ruhr Valley stood at €52.9 per hour in 2020, slightly above the European average but significantly lower than the averages for NRW and Germany. Economic and labor market metrics in the region continue to lag, with persistent challenges such as a high **unemployment rate** of 9.6% in 2023. This rate is well above the German and European averages, reflecting ongoing structural issues in the local labor market. Moreover, the region's buying power per household, at an index of 92 (purchasing power standards, EU-27 = 100) in 2020, remains well below the averages for NRW and Germany. Regarding the overall economic situation of Ruhr Valley inhabitants, the **average per capita disposable income** across all towns and cities is €23,563 (2022), drastically below the average values for NRW and Germany, but slightly above the EU-27 average of €20,193.

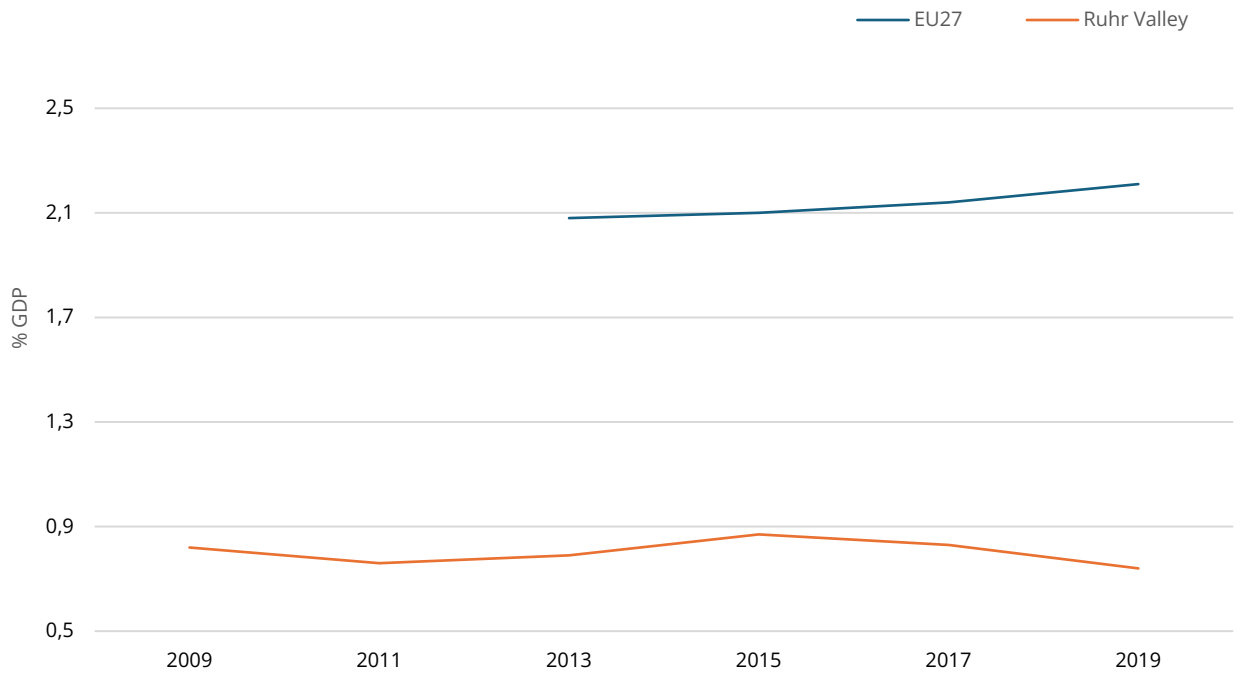
Figure 4 GDP per capita in the Ruhr Valley (2011-2021)



Source: Regionalverband Ruhr + Eurostat

The Ruhr Valley's R&D investment is notably low. **Total R&D expenditure** amounted to €1.3 billion in 2021, representing only 0.73% of the region's GDP. This is significantly less than the investment levels seen in Germany overall or even the EU average. Despite these limitations, the Ruhr Valley has shown resilience and adaptability in its transition from an industrial hub to a diversified economy.

Figure 5 R&D expenditure in % of GDP in the Ruhr Valley (2009-2019)



Source: Regionalverband Ruhr

While the Ruhr Valley faces economic challenges, it remains a cultural and educational powerhouse. Institutions like the Ruhr University Bochum, the University of Duisburg-Essen, and the Technical University of Dortmund play pivotal roles in fostering innovation and supporting the regional economy. These universities, along with renowned research institutes such as the Max Planck Institute for Coal Research and the Fraunhofer Institute for Environmental, Safety, and Energy Technology, contribute to scientific advancements and sustainability efforts. They also support the development of new KIBS, aligning with the region's objectives of revitalization and economic diversification.

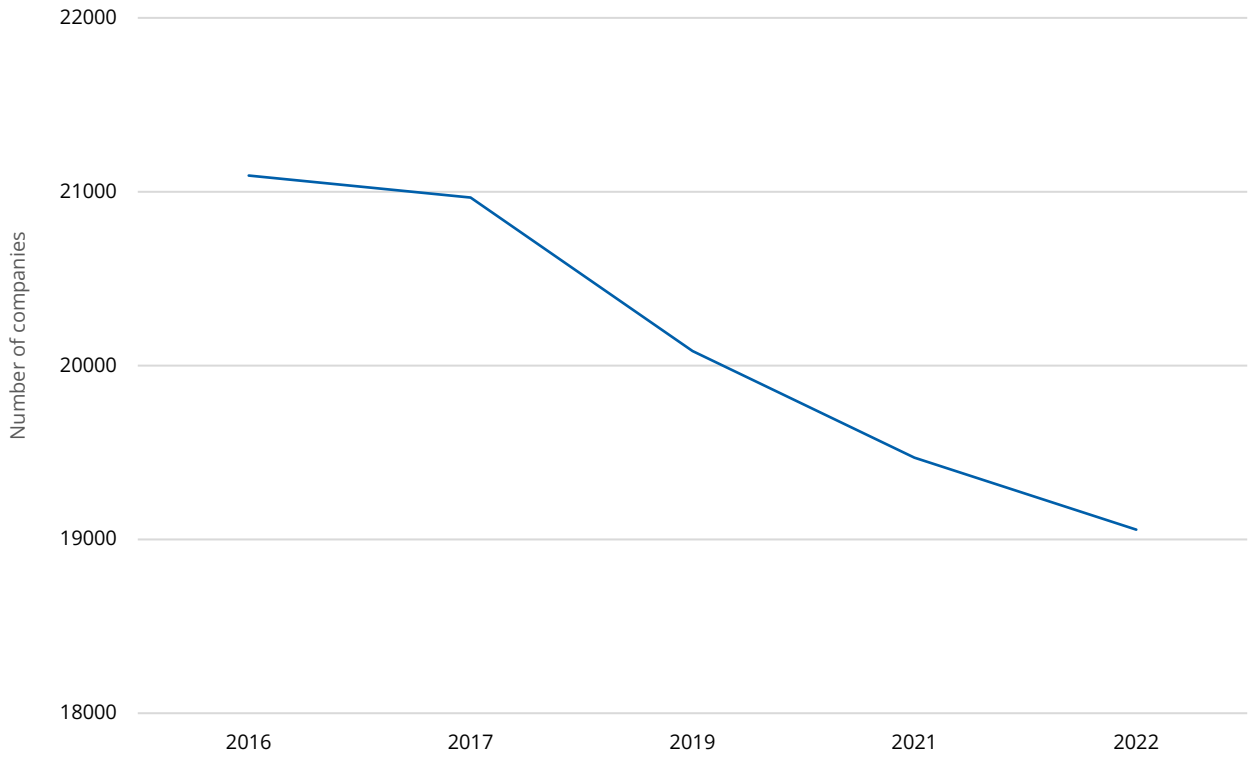
3.2.1. Industrial Landscape

In 2023, the Ruhr Valley reported 426,301 **employees in the core industrial market and industrial services**, of which 333,087 were in socially insured employment. The region saw a sharp decline of over 10% in industrial jobs between 2011 and 2021. Over the last few years however, these figures have regained stability, only declining by 1% over the last four years.

Compared to Germany and the EU-27, the Ruhr Valley's continues to outperform the EU-27 average in terms of industrial density and employment concentration, reflecting its historical role as an industrial powerhouse.

In 2022, the Ruhr Valley hosted 19,056 **companies in the industrial core market and industrial services**, down from more than 21,000 in 2016. This decline of nearly 10% strongly indicates structural changes as the region transitions from traditional heavy industry to more diversified industrial and service-oriented activities. Compared to Germany's broader industrial landscape, the Ruhr Valley has a higher density of industrial companies per square kilometer, underscoring its urbanized and industrially focused character.

Figure 6 Companies in the industrial core market (2016-2022)



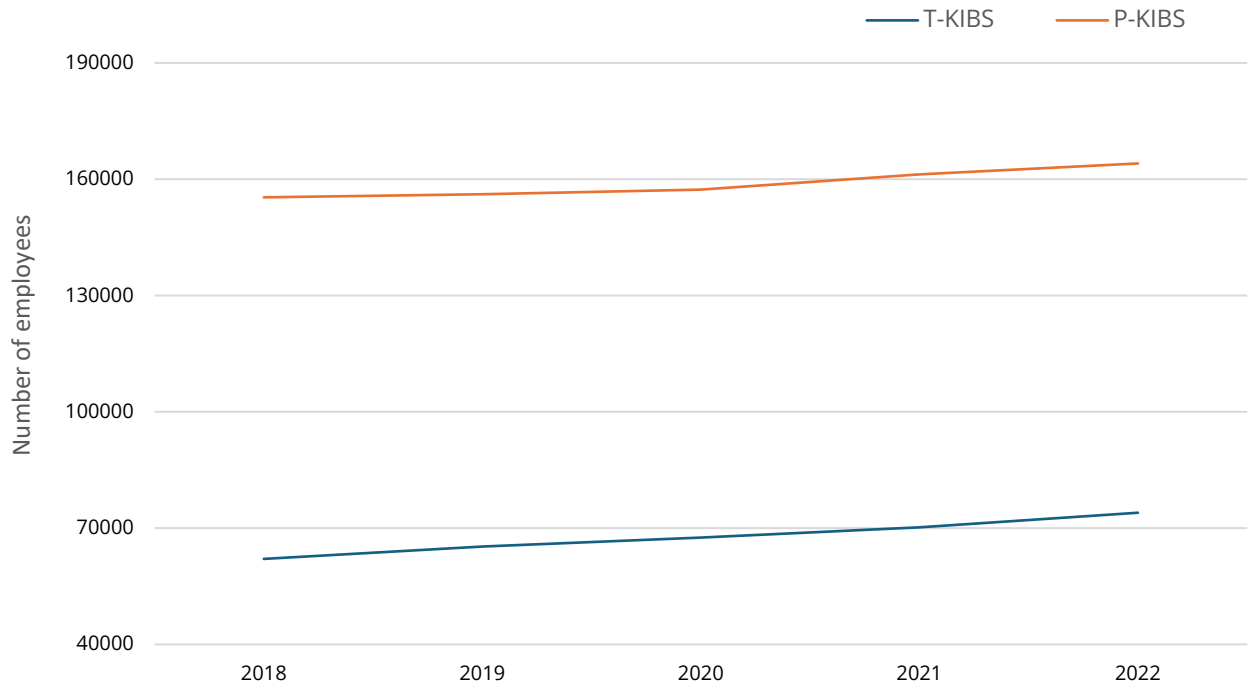
Source: Wirtschaftsbericht Ruhr

Employment in the Ruhr Valley's industrial sector is characterized by a strong presence in **medium- and high-technology manufacturing**, alongside traditional industries. This is showcased by an increase of 26.5% in employment in the IT sector over the last seven years. The region's share of employment in industrial sectors aligns with broader trends in NRW, but it lags behind Germany and the EU-27 in terms of its share in high-technology employment. The region shows slower growth in high-tech and innovation-driven industrial employment, emphasizing the need for strategic investments in R&D and workforce upskilling.

3.2.2. KIBS Presence, Employment and Demand

The number of **people employed in KIBS** (P-KIBS and T-KIBS) in the Ruhr Valley has increased by 9.5% over the years 2018 until 2022, amounting to 238,020 in 2022. Of these, 73,960 were employed in technological KIBS and 164,060 in professional KIBS. Since 2018, the former grew by 19%, the latter by 5.6%, while the overall labor market in the Ruhr Valley grew by 5.7%. Technological services appear to gain importance for the region.

Figure 7 Companies in T-KIBS and P-KIBS (2018-2022)



Source: Regionalverband Ruhr

Overall, the Ruhr Valley has witnessed a notable rise in the prominence of KIBS, reflecting a shift away from its traditional industrial base. Within the regional KIBS landscape, certain specializations stand out. Given the Ruhr Valley's enduring significance as a logistical hub, services related to **advanced logistics and supply chain management** are particularly relevant. These offer solutions in areas such as automation, digitalization, and sustainable logistics practices, often leveraging the region's existing infrastructure. This is exemplified by the presence of numerous logistics service providers specializing in intermodal transport, utilizing the region's extensive network of waterways, railways, and highways.

Furthermore, a strong presence of **engineering and technical consulting services** persists, building upon the region's industrial heritage. These services focus on emerging technologies, including Industry 4.0 applications, renewable energy systems, and environmental technologies designed to mitigate the region's historical environmental impact. For instance, companies

specializing in plant engineering for the chemical industry or providing consulting services for the transition to hydrogen technologies are prominent. Prominent multinational consulting firms with regional offices, such as Accenture or McKinsey, alongside established local engineering firms like Thyssenkrupp that have spun off KIBS subsidiaries, and specialized consultancies with deep ties to the industrial sector, constitute significant actors.

The Ruhr Valley also hosts a substantial number of highly specialized, often medium-sized enterprises. These firms frequently possess niche expertise in areas such as industrial plant engineering, bespoke IT solutions for logistics and supply chain optimization, and specialized consulting services catering to the energy sector's ongoing transformation. These specialized KIBS providers, though perhaps less visible on a pan-European scale, often operate nationally and internationally within their specific domains. These include, beyond the region's traditional strengths, the **new strategic focus areas** greentech, IT security and health. In the greentech sector, examples include consultancies specializing in renewable energy project development or companies providing environmental impact assessments for large-scale infrastructure projects. Within IT security, firms offering penetration testing, cybersecurity audits, and data protection consulting are increasingly important. Finally, the health cluster sees growth in KIBS such as providers of telehealth platforms or specialized consulting services for hospital management.

Looking at founding of **startup companies** in the Ruhr Valley, the region saw 92 startups being established in 2023, up from only 34 in 2015. That represents a growth of 270% over the course of these nine years. However, with the whole of NRW recording 534 companies founded in the same year, the state is a startup powerhouse in Germany and the Ruhr Valley does not excel compared to other neighboring regions.

3.3. Comparison of the regions

When comparing the economic landscapes and competitiveness of the Basque Country and the Ruhr Valley, one is confronted with the inherent challenge of defining the regions within **distinct geopolitical and administrative contexts**. The Basque Country is a politically autonomous community within Spain, while the Ruhr Valley is a geographically defined but administratively decentralized region within the German state of NRW. This disparity in geopolitical status has led to partly incoherent datasets, making immediate comparisons difficult. Furthermore, while the Basque Country benefits from well-documented economic and competitiveness **indicators** – partly due to the region's active self-governance – the Ruhr Valley often lacks equally granular, region-specific data, as its metrics are more frequently aggregated within broader NRW or national datasets. Despite these limitations, the examination of available data reveals that both regions share historical parallels in their industrial origins, while their recent trajectories show differences in economic transition and competitiveness. This chapter aims to summarize these dynamics, providing a comprehensive understanding of the regions' similarities and differences.

The Basque Country and the Ruhr Valley emerged as industrial powerhouses in the 19th and 20th centuries, with their economies deeply rooted in heavy industries. The Basque Country thrived on steel production, automotive, and energy-related industries, while the Ruhr Valley

became synonymous with coal mining, steel manufacturing, and industrial-scale engineering. These industries were not merely economic engines but also key contributors to regional identity and societal structure. Both regions experienced substantial population growth during their industrial booms, driven by migration to meet labor demands. However, the global economic shifts of the late 20th century – characterized by deindustrialization and the rise of globalization – had profound impacts on both regions. The Basque Country and the Ruhr Valley were facing structural challenges, such as the decline of traditional industries, environmental degradation, and high unemployment rates. These factors catalyzed their respective **transitions towards more diversified and knowledge-based economies.**

As described before, the **Basque Country's economic transformation has been marked by a proactive focus on innovation and specialization in advanced manufacturing**, one of the main regional strategic priorities. The region's strategic emphasis on R&D investment, technology parks, and the development of a robust educational infrastructure has fostered a competitive advantage in industry-related sectors like precision machinery, renewable energy, and digital services. Employment in high and medium-high technology manufacturing in the Basque Country, at 8.5% of total employment, significantly surpasses the EU-27 average of 6%. At the same time, and partly related to this focus on advanced manufacturing, the region's KIBS sector has begun to grow, with professional and technological KIBS contributing to labor market dynamism. The **Ruhr Valley's transition has been slower but appears more focused on diversification.** While undisputably still tied to its industrial heritage, too, with a continued presence of less advanced manufacturing industries, the Ruhr Valley has also experienced modest growth in KIBS employment, with technological KIBS gaining prominence. The Ruhr Valley's role in advanced logistics services and its new strategic KIBS focus areas of greentech, IT security and health hint towards a gradual detachment from the traditional industries and the manufacturing sector as a whole. For now, the overall economic structure, however, remains less innovative than that of the Basque Country, with productivity levels and R&D investment in the Ruhr Valley lagging behind those of both Germany and the Basque Country. The **Basque Country consistently invests heavily in R&D**, with total expenditure reaching 2.08% of GDP in 2022. Business R&D accounts for 77.19% of this total, reflecting the private sector's critical role in driving innovation. In contrast, the Ruhr Valley allocates only 0.73% of its GDP to R&D, highlighting a shortfall in innovation capacity.

Demographic trends show further challenges for both regions. The Basque Country, with a population of just over 2.2 million, faces significant challenges related to population ageing and the resultant strain on its labor market. However, the influx of foreign-born residents, who now constitute 12% of the population, has introduced an element of dynamism and cultural diversity, albeit insufficient to offset the broader demographic pressures. The Ruhr Valley, with a population of over 5.1 million, also grapples with demographic stagnation and a high proportion of older residents. However, its larger population base and urban density contribute to a unique economic and social landscape. The labor market in the Ruhr Valley continues to face structural challenges, evidenced by an unemployment rate of 9.6%, significantly higher than the German average. While the Basque Country's unemployment rate of 7.6% is closer to the EU average, the narrowing gap between the two regions suggests that persistent labor market challenges are shared.

In terms of economic competitiveness, the Basque Country consistently outperforms the Ruhr Valley. Its GDP per capita (€42,159 in PPP) far exceeds that of the Ruhr Valley (€35,133). Productivity levels in the Basque Country are higher, contributing to greater corporate profitability, yet are strongly tied to the manufacturing sector. Additionally, the region's material living standards, as indicated by metrics like median household income and net disposable income, are among the highest in Spain and above the EU average. The Ruhr Valley, by contrast, exhibits weaker economics, characterized by persistent unemployment, lower household buying power, and lagging R&D investment. However, **the Ruhr Valley benefits from its strategic location within Germany and Europe, along with its dense network of educational and research institutions**, which serve as potential catalysts for revitalization.

The broader **national contexts of Spain and Germany provide critical frameworks** for understanding the development trajectories of the Basque Country and the Ruhr Valley. Germany's robust industrial base, higher R&D intensity, and global leadership in engineering and manufacturing have set a high benchmark for regions like the Ruhr Valley. However, the **decentralization of regional development policies in Germany** has sometimes led to uneven progress, with the Ruhr Valley exemplifying the challenges of balancing historical legacies with future-oriented strategies. Spain, on the other hand, has faced greater economic volatility, particularly in the aftermath of the global financial crisis and the COVID-19 pandemic. The **Basque Country's autonomy** has allowed it to implement targeted policies that prioritize innovation in high-technology manufacturing (Science, Technology and Innovation Plan 2030, for example), enabling it to outpace other Spanish regions and align more closely with European leaders. Nevertheless, Spain's relatively lower national R&D intensity and structural economic challenges continue to influence the Basque Country's development trajectory.

While both the Basque Country and the Ruhr Valley share a common starting point as industrial regions, the data analyzed suggests that **their economic transitions have taken different trajectories in recent decades.** The Basque Country appears to have made notable progress in advancing its manufacturing industry towards high-tech sectors, resulting in higher productivity and competitiveness metrics. At the same time, the Ruhr Valley shows evidence of a deliberate shift toward diversifying its economy to sectors less related to manufacturing, yet at the same time it doesn't achieve comparable levels of innovation activity and economic success.

Despite these differences, both regions exhibit a visible economic transition and a commitment to redefining their identities in the 21st century. As such, the Basque Country and the Ruhr Valley **provide valuable case studies for understanding the dynamics of TS in post-industrial regions.** This comparison lays the groundwork for a deeper qualitative exploration of how regional policies and economic structures influence the trajectory of economic transformation.

4. Mechanisms of Territorial Servitization

4.1. In the Basque Country

The analysis of TS in the Basque Country **builds on data collected in the framework of a project launched by Bilbao Ekintza**, the economic development agency of Bilbao, and described below. The project led by Bilbao Ekintza provided the framework for implementing the planned actions within TerriServ project. Both projects shared the goal of promoting TS, a research team, and the same key stakeholders for analyzing this topic. Moreover, the scope of the Bilbao Ekintza project extended beyond that of TerriServ, allowing for additional insights to be gained. This potential was the reason it was selected as the case study for the Basque Country.

4.1.1. Project description

In 2023, the Bilbao City Council launched a process aiming to connect the city's KIBS companies with the industrial fabric of the Basque Country. For this, Bilbao Ekintza, in collaboration with Orkestra, developed the necessary capacities and methodologies to implement a collaborative governance model aimed at promoting KIBS in the city. Specifically, the project aims to create a **novel framework for interactions among triple helix[14] actors**, facilitating the co-design of effective policies through a shared vision and leadership. This new **collaborative governance** frames the project to boost KIBS-industry connection.

In addition to the KIBS Forum for decision-making, four working groups were activated in autumn 2023 to address specific KIBS competitiveness challenges within the new collaborative governance: talent mismatch, urban infrastructure, testing models and **KIBS-industry connection**. The analysis in this report is focused on this last working group.

The first step in activating this collaborative governance was to involve policymakers from different institutional levels, as well as business and university representatives. In September 2023, Bilbao Ekintza's Managing Director and the city council's Councilor for Economic Development held a series of meetings with policymakers and stakeholders. They held one-to-one discussions with each of them, sharing the city's vision and asking them to nominate representatives to participate in the relevant working groups. The feedback was overwhelmingly positive, with all parties agreeing to work together. This was followed by a series of workshops within each working group. The aim was to jointly define **key projects to be developed jointly by the participating triple helix players** in order to address the specific competitiveness challenge posed by the group. The project proposals would later be presented and, if possible, validated in the KIBS Forum.

[14] Triple helix: interaction between three main agents of an innovation ecosystem, namely academia, industry and public administrations.

A total of 18 stakeholders were involved in the **KIBS-industry working group**, including representatives from regional and provincial governments, universities, industrial and service cluster associations, and individual KIBS companies. One of the key connections, through the involvement of representatives from the regional government, was with the Science, Technology, and Innovation Plan of the Basque Government, which, as described in Section 3, placed a specific focus on KIBS.

Figure 8 Stakeholders of the KIBS-industry working group

Source: Own elaboration

The first workshop focused on the prioritization of KIBS-industry liaison challenges that could be jointly addressed. In the second workshop, the participants collectively defined the action lines to address the previously identified challenges. By the final workshop, **four concrete project proposals had been co-designed** (presented in section 4.1.3).

Figure 9 Workshops in KIBS-industry working group

Source: Own elaboration

In between the workshops, one-on-one meetings were held as needed, to clarify concepts, verify real participation, bring new actors into the process, or bring non-attending actors up to date. It was also essential to systematize the information exchanged and generated during the workshops. Consequently, the Bilbao Ekintza team produced and distributed a report after each meeting. The main findings and conclusions of these reports served as a starting point for the following workshop. All these one-on-one meetings and workshops serve also as the basis for the analysis presented in the following two sections, which examine local stakeholders' perceptions of TS (4.1.2) and the resulting policy actions from the KIBS-industry working group (4.1.3.). In addition to the data collected through meetings and workshops, further insights were gathered from nine interviews conducted with stakeholders who were not part of the KIBS-industry working group. These stakeholders represented government and intermediary organizations, as well as KIBS and industry companies or cluster associations. The interviews were conducted between July and November 2023.

4.1.2. Perceptions of TS from local stakeholders-input from the process

A central idea that comes from the perception of interviewed agents has to do with the importance of considering TS as an explicit focus within territorial industrial and competitiveness strategies. According to some agents, **the importance of services related to the industry** (servitization) must be considered in the industrial policy. As mentioned by an interviewee, "*I perceive the Basque industry as becoming more complacent. What I mean is, it is conforming because it has a lot to lose. Maybe there used to be a much riskier business culture, I won't say innovative, but much riskier, because there was less to lose*".

The reality of the different provinces within the Basque Country differs in terms of the degree and interest of connecting KIBS and industrial fabric. Bilbao-Bizkaia has some interesting

practices that could be extended to the rest of the provinces in the Basque Country. The demand for KIBS in industry is expected to grow in the coming years, and in Bilbao there is a **clear and explicit political will to promote KIBS** in their role of supporting industry and to do so within territorial strategies. As one interviewee noted "*Bilbao does not need to develop its own strategy for advanced services, but Bilbao should align itself with the Basque strategy. I am very insistent with this, very clear, because it was never a question of Bilbao creating a separate or isolated strategy, but of Bilbao building on the Basque strategy and aligning ourselves with the Basque strategy, in the same way that we are aligned with the strategy of the Provincial Council of Bizkaia*". The desire for the different levels of policy to be aligned is a clear desire of policy makers from Bilbao.

However, there is also a certain degree of **reluctance to collaborate with companies and agents located in neighboring territories and provinces**. This can limit opportunities for growth and innovation, as businesses may miss out on valuable insights and resources that come from broader collaborations. As one interviewee explained, "*In design we have worked a lot with companies from Gipuzkoa and we had the feeling that they did not like we were from Bilbao*". This strong territorial identity that could harm the possibilities of some KIBS for collaboration with other provinces is noted by another respondent, "*Gipuzkoa is inbred, it is difficult for someone from Bilbao to make it there*". These perceptions and excessive **provincial focus** could limit the potential of the Basque Country to compete against other Spanish regions such as Cataluña or Madrid. Strong identity is seen as very positive but, in some cases, the different layers of identity could create challenges. As noted by one participant, "*but I think that the identity that each of us has, in personal and professional matters, often prevents us from... generating things together*."

Another group of perceptions of TS corresponds to the **industrial and, quite often, conservative culture** of Basque companies. As noted by one interviewee, *"There is a somewhat conservative culture on the part of the industry...". "Size is an element to consider: large companies prefer large companies". "They only hire companies with consolidated references, so it is very difficult for start-ups".* In short, collaboration with KIBS and startups is neither internalized nor a priority for most of industrial companies. Due to the intangible nature and cultural barriers, the industry requires KIBS to have experience with similar issues and to receive personal references to facilitate the purchasing decision.

The industrial culture is characterized, on the one hand, by a pronounced **product mindset** and consequently, the change towards servitization is hard to achieve for most industrial companies. Indeed, the **lack of service readiness** is one of the limitations they have and also the "do it yourself" mindset of trying to solve the problems "in house".

On the other hand, KIBS "do not speak the language" of the industry and consequently do not know how to convey their value proposition correctly. As noted by a participant, "*KIBS do not speak the language of industrial companies: they do not know how to sell themselves properly*". In the same vein the lack of skills among KIBS when defining their value proposition is highlighted "*The KIBS concept is far from the industry. Its presence is scarce and its value proposition undefined*."

In contrast, the perception of KIBS is that the industry also has difficulty in specifying what it is looking for and has a very short-term focus. "*The industry also finds it difficult to achieve what it*

is looking for". In the industry we often find a focus on short-term measurable outputs; a lack of patience with a desire for immediacy".

It can be concluded that **readiness for servitization is lacking from both sides, KIBS and industry**. This lack of readiness from both parts leads to incurring in **high search costs**. Search cost refers to the expenses and resources (time, effort, money) that businesses incur when looking for information, products or services. This is particularly relevant as it highlights the challenges industry has when looking for the best option available of KIBS. Industries are facing significant search costs due to firstly, the lack of knowledge, and secondly, the complexity and specificity of the services offered by KIBS. As summarized by one interviewee, "*The entrepreneur and the technology specialist do not know each other*."

The **intangible nature of the services offered by KIBS** is perceived as a barrier as the industry does not understand the value it brings, because of the difficulty of expressing the value in tangible terms that industrial players are used to. In addition, there is a perception that KIBS don't understand customer's need and thus, which makes it all the more difficult to communicate their value proposition clearly. "*It is difficult to explain/understand its value beforehand, while the customer's needs are not always clear either*." "*It is not a tangible product*". Moreover, services are co-created jointly by KIBS and the industry, and the final result is customized according to the client and his needs: "*The final service is a result of co-creation and customization*." Therefore, the connection and common language between KIBS and their industrial clients is all the more important.

Moreover, it seems that the **physical proximity** between supply and demand plays a significant role in shaping the relationship between the industry and KIBS. This is particularly evident within a distance of 100 km, suggesting that being nearby can enhance collaboration and efficiency. In the information search phase of the purchasing process, it's common for industrial companies to feel a bit lost about where to find the right options. As a result, they often gravitate towards suppliers or services that are physically nearby. This tendency can be driven by the desire for convenience, quicker communication, and the ability to establish stronger relationships. "*Many industrial companies do not know where to look, and start with the nearby (or in-house)*". KIBS note that the **pre-sales phase plays a vital role in establishing a strong market presence**. This phase is all about building awareness and credibility, which is essential for attracting potential clients. Effective commercial efforts, such as marketing strategies, networking, and showcasing expertise, help KIBS firms stand out in a competitive landscape. By focusing on achieving awareness these companies can create trust and interest, making it easier to engage with clients when they are ready to make a purchase. "*In the pre-sales phase, being able to move around to be seen is very important*."

According to the participants, **in-person relationships are essential before the sale**. One interviewee remarked, "*Many industrial companies participating in BIND 4.0*[15] *end up working*

[15] BIND 4.0 is one of the Basque Government's award-winning open innovation and startup acceleration platforms, led by the regional economic development agency SPRI. It pitches and pilots Industry 4.0 solutions by connecting early-stage tech startups with major corporations, SMEs, and public sector entities in paid real-world projects (https://bind.spri.eus/).

for/choosing distant (quasi-KIBS) tech start-ups". Once KIBS is hired, physical proximity is no longer relevant, as they adapt to face-to-face or virtual contact. And the important thing is specialization. "*Once we have a contract, distance disappears as a barrier, and we adapt to the situation with face-to-face and virtual contact*". "*We have clients all over Spain and we work with those who are farther away just as we do with those who are close by*".

Network failures occur when the connections and interactions between different actors in a market or region do not function effectively, leading to inefficiencies and missed opportunities. In the context of TS, which involves transforming traditional goods-based economies into service-oriented ones, these failures can hinder the development and delivery of services that meet local needs.

Intermediary agents such as public institutions, clusters or regional agencies **play a key role** in bridging gaps between various stakeholders, such as businesses and KIBS. Strengthening their role can help mitigate network failures by facilitating communication, fostering collaboration, and enhancing the flow of information. These agents can assist in identifying local needs, coordinating resources, and promoting innovative service solutions that are tailored to specific territories. As explained by a participant, "*There is much to do. It is not necessary to make the same furrow deeper, but to make more furrows: to advance and not to sink* ". The work of clusters, associations and other intermediaries could focus on facilitating mutual knowledge between industry and KIBS. This would improve visibility and increase awareness of what KIBS offer to the industry, which is one of the shortcomings detected. "*The clusters and other intermediary organizations that organize events where we can showcase what we do, help us (and our competencies) to get to know each other*." "*If there is no presence of intermediaries it is complicated to know what is out there (it serves to clarify the offer*)".

In this line, an interviewee remarked the **importance of the public administration as a protagonist in facilitating pilot projects** to improve collaboration between the two parties. "*Public administrations should facilitate pilot projects to foster a collaborative culture between KIBS and industry".*

There is a general perception that by **empowering intermediary agents**, regions can improve their ability to adapt to changing market demands, improve service delivery, and ultimately drive economic growth. This approach not only addresses the challenges posed by network failures but also supports a more integrated and responsive service ecosystem that benefits all stakeholders involved. In this vein, some provinces have better articulated the dialogue with county and urban agencies (e.g. in the case of Gipuzkoa) and could serve as a channel to give more visibility to KIBS and facilitate connections between them and the industry.

However, for some agents, **it is not clear that public administrations should be active** or take a leading role in connecting KIBS companies with industry. According to them, if the private sector expresses an interest in receiving help in this respect, it should be willing to contribute. As one agent from the public administration noted, "*I am not clear about the role of public administrations in this issue. It's another matter if companies ask or identify a series of difficulties to the government asking for support to make the connections… but the initiative needs to come from business. Otherwise, in my mind, administrations should not get involved".*

There is also some criticism from KIBS about some intermediaries because, in their opinion, certain associations or clusters are **supplanting the work that should be done by the KIBS**. "*Why does cluster X have to take care of the digitization of their partners? It should be the job of the KIBS*". Agents pointed out that once a contract is formalized, the relationship moves forward, but in order to reach that point, the work of intermediaries appears to be significant: "*Once there is a contract, things move, but in order to find and understand each other, the work of intermediaries (e.g. clusters, agencies, ...) seems to be essential.*"

Another difficulty for organizations in general is attracting talent. As an interviewee explained, "*Professionals who work in advanced services, in technology companies, professionals who are generally young, value all things urban*". The importance of proximity emerges as important for advanced service professionals who value having their work location in an urban environment. "*So what they want is to have everything close by. Consequently, the management of the technology parks in Bilbao/Zamudio and the others, both in Donostia [San Sebastian] and in Araba as well, want to complete their offer with urban campuses, because many companies tell them that to recruit the famous talent, to hire people, being far from a city penalizes them*". As a result, some intermediaries such as technology parks are taking this factor into account when locating their campuses.

4.1.3. Policy actions for TS

As a result of the collaborative governance process developed within the KIBS-Industry Connection Working Group (described in the introduction of this section), **four main projects or policy actions were co-designed**. These policy actions are related to the main challenges identified during the meetings and dialogues described above and begin implementation as this report is being drafted. Moreover, there is a chronology between them. This means that **each of the actions will be implemented according in the order presented below**.

KIBS Catalogue

A **catalogue of the KIBS located in Bilbao**, which, in addition to the basic data and a description of the activity carried out by each company, **includes their capabilities, value proposition and specialization**. To gather this information a survey will be sent out to around 1,000 KIBS companies, asking them about the services they offer; the sectors they work for; if working for the manufacturing industry what solutions they offer and which aspects are more valued; the barriers they face in reaching industrial customers, etc. This catalogue will form the basis for implementing all kinds of measures to support KIBS.

This policy action contributes to all the following policy actions and to the challenges faced by KIBS companies themselves described in the previous section, such as the challenge of **raising the visibility of KIBS or finding opportunities to offer integral solutions among KIBS**. The process of compiling the catalogue would firstly make it possible to identify in detail the existence of each of these companies, the first step towards raising their visibility.

Collaboration among KIBS companies

The information gathered in the catalogue will form the basis for identifying opportunities and facilitating **collaboration among the companies and the development of joint solutions**.

The aim of this policy action is to facilitate meetings between KIBS companies around a specific theme so that they can network and collaborate.

The majority of KIBS companies are micro-enterprises and start-ups that, on their own, usually do not have the capacity to offer the solutions that industrial companies require. Cooperation between KIBS companies could make it easier to offer integrated solutions based on information about the specific needs of industry, which is often scattered among different companies. This would also contribute to being close**r to the industry's language and its specificities**. In addition, the increasing demand for integrated **solutions that include services from technological and professional KIBS** shows the importance of creating these meeting points. Greening processes in industrial companies, for example, require both the integration of specific technologies and the services of strategic and environmental consulting provided by professional KIBS.

KIBS-industry meetings

These would be **meetings between KIBS companies in Bilbao and regional industrial SMEs** with a very practical aim: to identify service solutions for the challenges faced by industrial SMEs. The meeting would provide an opportunity to contrast, in a practical way and in a short period of time, the services developed in collaboration within the KIBS companies described in the previous policy action. In addition, they would make it possible to **show industrial companies the potential benefits of working with KIBS**, one of the main challenges identified on the demand side (industry). These meetings would also help to create a common language between the two sides.

The meetings, both between KIBS companies and with industry, as well as the service solutions resulting from the KIBS-industry meetings, would make it possible to enrich the KIBS catalogue.

Communication plan

The aim of this line of action is to co-create and communicate **a common story that tells about the "Bilbao KIBS" brand,** highlighting its differentiated value and serving as a presentation tool to reach industry. The catalogue would be part of the plan, so that it contributes to the need to **increase visibility** that was identified in the interviews and manifested by the actors involved in the KIBS-Industry Connection Working Group and interviews. However, this plan would have to be aligned with the rest of the working groups described in the introduction and the KIBS Forum which will act as an umbrella for the City Council's overall strategy to support KIBS.

4.2. In the Ruhr Valley

Adopting a methodological approach similar to that used in the Basque Country – albeit over a shorter timeframe – this study's qualitative data collection in the Ruhr Valley combined semi-structured interviews with public and private stakeholders and a focus group involving representatives from intermediary organizations, universities, policymakers, and entrepreneurs. Conducted between October and December 2023, the seven interviews provided initial insights into the region's ongoing transformation. These findings were then used to develop a focus group concept, designed to explore further the dynamics between

different stakeholder groups. The aim was to capture not only their critiques of the current transformation process, but also the expectations they hold when confronted directly with other actors. The focus group centered around a recurring theme that emerged during the interviews, namely the role of knowledge as the driving force behind the Ruhr Valley's economic transformation.

The focus group took place in May 2024; and brought together a diverse array of stakeholders, including representatives from a municipal economic development agency, a chamber of industry and commerce, a municipal government, the pan-regional economic development agency for the Ruhr Valley, four KIBS firms, and three full professors from Ruhr University Bochum. To broaden the perspective, the session also included a representative from Bilbao's economic development agency and project partners from the University of Deusto, offering comparative insights from the Basque Country's transformation process. This configuration allowed for an in-depth examination of how intermediary organizations tasked with implementing policies align their strategies and actions – both with each other and with the policymakers they serve. It also provided a critical lens through which to analyze the role of universities in the region's transformation and, importantly, the self-perception of start-up entrepreneurs, particularly regarding how well their interests align with political and economic objectives.

The subsequent analysis highlights the most salient insights gleaned from the interviews and focus group in the Ruhr Valley. These findings illustrate stakeholders' perceptions of the transformation as it unfolds and the political vision for the region's economic future. Together, they offer a nuanced understanding of the challenges and opportunities facing the Ruhr Valley as it seeks to redefine its economic identity in a knowledge-driven era and enable a direct comparison with the policy attitude towards TS in the Basque Country.

4.2.1. Perceptions of TS from local stakeholders

The perceptions of TS among local stakeholders in the Ruhr Valley reveal a complex interplay of progress, persistent challenges, and unmet expectations. As the region continues its transformation from an industrial stronghold to a service-oriented economy, stakeholders recognize both the necessity and the difficulty of this shift. This narrative is shaped by **diverse perspectives on progress, systemic barriers to collaboration, and a wide range of expectations placed on public actors**.

Local stakeholders' assessments of the region's progress in transformation and competitiveness are, at best, ambivalent. Some stakeholders see evidence of forward movement in model projects such as *Mark 51°7*. In this project, an industrial site – that has previously been used for coal mining and later automotive production – is being transformed into a "technology and knowledge campus" through the settlement of KIBS providers and other services there. Meanwhile, others caution against overinterpreting isolated successes. One interviewee remarked, *"These flagship projects are nice, but they are not substitute for a comprehensive regional strategy."* The **absence of a clear and coherent plan** is a recurring critique, as stakeholders express frustration at the piecemeal nature of the transformation efforts. Founding rates in the region remain below the national average, highlighting a

persistent struggle to foster entrepreneurial dynamism. A key informant from a local business noted that *"founding rates are the backbone of economic vitality, and here we are still lagging significantly behind."*

The industrial relevance of the Ruhr Valley, once synonymous with economic strength, is described as "*a relic of the past*". This decline is viewed as inevitable, with stakeholders acknowledging the ongoing tertiarization of the economy. The service sector is now the dominant employer, although it is largely concentrated in logistics – a sector not associated with high value creation. There is a consensus that the **region's innovation culture, while adequate, does not stand out** compared to other German regions. A participant from a local innovation agency explained, *"We are not doing poorly, but we are certainly not leading the way in terms of innovation capacity. It's hard to create a unique identity when others are advancing faster."* Innovative KIBS, which are considered critical to sustain competitiveness in a knowledge-based economy, remain scarce.

Standardized and rather redundant KIBS – that require high technological or processual knowledge but little to no innovation capability – are commonly procured by industrial firms on a regular basis from the same providers. Examples for such services are construction project management or industrial simulation. No support is needed from the public side to support such transaction-based collaborative projects. Meanwhile, more conceptual, **future-oriented KIBS** – that might still require high technological knowledge but also a significant innovation capability on both sides – seemingly **cannot be attracted to the region without the support of public stakeholders**. This is due to their novelty and the high need for co-creation and relationship-based collaboration instead of unilateral delegation of tasks. Examples we found for such KIBS included the conceptualization of a service-based, circular business model for heat pumps or the planning of novel, sustainable food value chains. However, providers of such services remain a rarity in the Ruhr Valley. This scarcity is worsened by the **shortage of skilled labor**, due to a drain of the human capital needed to drive transformation into other regions. Stakeholders frequently lamented the inability to retain talent, with one interviewee stating, *"We train them here, but they don't stay. The opportunities elsewhere are simply more attractive."*

Adding further complexity is the perception that the Ruhr Valley **lacks a cohesive regional identity or a distinctive competitive advantage**. Stakeholders highlighted the challenges of promoting the region on the national and international stage. The region's polycentric character, while often cited as a strength in terms of diversity, is seen as a barrier to presenting a unified image. As one respondent noted, *"Without a strong regional identity, we struggle to compete with cities like Munich or Berlin that can present themselves as singular hubs of innovation or culture."* This fragmentation is further exacerbated by the lack of a *"strong hinterland"* comparable to regions like Stuttgart or Hamburg, where suburban areas provide additional economic and demographic dynamism. Instead, the Ruhr's urban landscape is characterized by closely packed cities that often compete rather than collaborate.

Challenges to regional collaboration and the transformation process further complicate the picture. Among the most frequently cited obstacles are mindset **issues that hinder openness to change**. While the Ruhr Valley is historically known for its camaraderie and pragmatic attitude, this cultural trait is seen as a double-edged sword. On the one hand, it fosters a sense

of **solidarity**; on the other, it may entrench **resistance to innovation**. A stakeholder in the industrial sector reflected, *"The mindset here is pragmatic, but also a bit stuck in the past. People don't want to take unnecessary risks, and that limits our potential."* **Miscommunication between actors** is another pervasive issue. Collaboration among universities, industrial firms, KIBS, and intermediaries is described as sporadic and unsystematic, with differing priorities and terminologies often leading to misunderstandings. A university representative observed, *"we speak the language of research; businesses speak the language of profit. Bridging that gap requires more than good intentions."* This disconnect is **not sufficiently mitigated by intermediaries**, who are perceived as idle and failing to fulfill their role as facilitators. One stakeholder criticized local chambers of commerce, noting, *"They support any idea but do so passively, without pushing for alignment or outcomes. It feels like they are just ticking boxes."* With the industry remaining a key economic factor in the region for the time being, intermediaries appear unsure of their responsibilities in this transformation, contributing to their perceived passivity and failure to follow a clear strategy in their supportive action.

Some stakeholders also raised concerns about the role of **universities**, which, despite being plentiful in the region, are **not always effectively integrated** into the local innovation system. While many businesses collaborate with universities, these partnerships are often limited to personal relationships rather than institutionalized frameworks. One respondent emphasized, *"we have so many universities, but their potential remains untapped because there is no structure to systematically link academia with industry."* This issue is symptomatic of a broader lack of coordination among regional actors, which hampers the development of clusters and innovation ecosystems.

The perceived aimlessness of policy also contributes to the challenges. Stakeholders express frustration with what they see as a **lack of clear direction and actionable goals from public actors**. This is compounded by a tendency for prolonged policy discussions resulting only in hesitant action. A participant from the focus group summarized this sentiment, saying, *"Too many studies, too many reports, but little real change. The region needs leadership, not just analysis."* Such critiques underscore the need for a more coordinated and visionary approach to managing the transformation.

Expectations towards public actors, however, **are marked by notable discrepancies**. On the one hand, there is a vocal demand for more subsidies to kick-start the transformation process. Proponents argue that financial support is essential to alleviate the economic pain associated with structural change. One business owner remarked, *"Without subsidies, smaller firms will not survive the transition. The government needs to cushion the blow."* On the other hand, some stakeholders advocate for a strategy that intentionally increases discomfort to accelerate change. This perspective is encapsulated in the comment, *"The region's pain has never been big enough to trigger real transformation. We need to feel the urgency."* A recurring expectation is the development and adherence to a clear strategy for the entire region. Stakeholders emphasize that such a strategy must balance the competing interests of various actors while providing a unified vision for the future. Deregulation and the reduction of bureaucratic hurdles are also commonly cited as prerequisites for progress. As one entrepreneur explained, *"Bureaucracy is a major bottleneck. If we want to attract innovative companies, we need to make it easier for them to operate here."* Additionally, public actors are expected to exert more pressure on the industry

to align with regional goals. A participant from the focus group argued, *"Laissez-faire policies will not work. The government needs to hold businesses accountable for their role in the transformation."*

Intermediaries are also urged to adopt a more proactive stance, particularly in supporting SMEs. Stakeholders express the view that intermediaries must do more than merely facilitate discussions; they should actively help SMEs navigate the complexities of transformation. A local SME manager highlighted this gap, stating, *"We don't need more meetings; we need actionable support, whether it's through funding, training, or connecting us with the right partners."*

4.2.2. Political view of TS

Having gathered the perceptions of various stakeholders on the transformation in the Ruhr Valley, how does the political attitude towards it correspond? Engaging with policymakers in interviews and focus groups, it became visible that the political vision for TS in the Ruhr Valley represents a **transformative approach to redefine the region's economic structure**. As industrial activity continues its sharp decline, the focus shifts to opportunities in specialized high-tech production, endogenous growth, and leveraging knowledge as the cornerstone of economic development. Politicians and stakeholders alike recognize the urgency of crafting a coherent strategy to ensure the region's competitiveness in a rapidly changing global economy.

The future of industry in the Ruhr Valley is shaped by a consensus that traditional industrial activities will continue to diminish in scope and significance. The days of large-scale production facilities are viewed as a relic of the past, and many interviewees noted that industrial activities would need a fundamental reinvention to remain viable. As one respondent put it, *"Production is no longer what defines the Ruhr Valley. What we need is an industrial sector that reflects the needs of the future – specialized, sustainable, and tech-driven."* Opportunities lie in establishing **niche industries and high-tech production tailored to the region's strengths**, such as its logistics infrastructure and historical expertise in materials science. The concept of **"region-related" production** was frequently highlighted, with interviewees suggesting that industries tied to local needs, such as sustainable energy solutions or circular economy practices, could form the backbone of a modernized industrial landscape. To complement this transformation, attracting the headquarters and R&D departments of innovative companies is an objective. The Ruhr Valley's central location in Europe and its extensive transportation networks are seen as assets in this regard. One participant emphasized, *"Our region is perfectly positioned to host decision-making and innovation centers. But we need to create the right environment – one that is attractive to global players."* This vision includes developing physical and intellectual infrastructure to make the region competitive for hosting high-value activities, even as large-scale production moves elsewhere.

Interviewees also showed recognition that dependence on a small number of large actors is not sustainable. Historically, the Ruhr Valley's economic fortunes were tied to major industrial players, but this model has proven fragile in the face of globalization and structural change. Political players from the Ruhr Valley were clear in stating they "*don't want to make the same mistake again*", after relying on one specific industry or even a few big players to carry the economy on their shoulders. **"Endogenous growth"** is considered the roadmap to resilience, so policy counts on allowing the local economy to now grow more naturally instead of artificially

attracting or retaining "*toxic big players*" that build up a network of fully dependent suppliers and service providers around them. Policymakers now aim to cultivate a **more diversified economic landscape, where SMEs play a central role**. One stakeholder observed, *"Big players come and go, but small, locally embedded companies are what sustain a region. We need to focus on fostering those connections."*

In this context, knowledge is identified by interviewees and strategy documents as "*the central resource and engine of economic growth.*" The political vision places particular emphasis on academic knowledge, leveraging the Ruhr Valley's dense concentration of **universities and research institutions**. The concept of "Bochum as a knowledge city" is emblematic of this shift, with knowledge production, dissemination, and application viewed as essential drivers of regional transformation. Interviewees consistently highlighted the need to **integrate knowledge into all aspects of the economy**. As one academic partner stated, *"Knowledge is more than just science; it's the practical know-how that businesses need to thrive. We must bridge the gap between theoretical knowledge and its application."* This vision also extends to fostering a culture of continuous learning and professional development. Politicians aim to position the Ruhr Valley as a hub for **lifelong learning**, where workers are equipped with the skills necessary to adapt to changing economic demands. This requires substantial investment in education and training infrastructure, as well as partnerships between universities and businesses to ensure that academic outputs align with industry needs. A respondent from the private sector noted, *"Universities and companies must work together. The knowledge created in academia needs to translate into innovations that benefit the local economy."*

The **attraction of KIBS and the cultivation of a vibrant start-up culture** are identified as the cornerstone of this political vision. KIBS are recognized as facilitators for innovation and driving economic diversification. However, the current presence of KIBS in the Ruhr Valley is seen as insufficient, and stakeholders emphasize the need to create an ecosystem that encourages their growth. A focus group participant noted, *"Regions that succeed in attracting KIBS are the ones that innovate and grow. We need to make this a priority."* The political vision is to heavily increase the number of start-up foundations in the KIBS sector by "*concentrating all efforts*" on this, to reach a certain degree of agglomeration. Such efforts include incentivization, but also expedition of bureaucratic processes for foundation and settlement as well as creation of infrastructure for the newly designated KIBS hubs. The start-up ecosystem in the Ruhr Valley, while showing signs of improvement, is still in its nascent stages. Policymakers aim to position the region as a destination for entrepreneurs, particularly those working in knowledge-based and technology-driven fields. This requires not only financial support but also the cultivation of an entrepreneurial culture that values risk-taking and innovation. One respondent remarked, *"Start-ups bring energy and fresh ideas to a region. If we can attract them here, they will become the driving force behind our transformation."* Initiatives to attract international start-ups, particularly from neighboring countries like the Netherlands and Belgium, are seen as a way to inject new perspectives and expertise into the region.

With this political vision comes a "Smart Specialization Strategy". Policymakers advocate for **focusing resources on a limited number of sectors where the region can achieve a competitive advantage**. Fields such as IT security, health technology, and green technology have been identified as promising areas. Interviewees frequently referenced the success of

hubs like the IT Security Cluster in Bochum as examples of how specialization can attract investment and create jobs. One respondent argued, *"Specialization doesn't mean limiting ourselves; it means excelling in areas where we can be globally competitive."* This approach requires careful planning and coordination to ensure that investments are targeted and that the benefits of specialization are widely distributed across the region.

Reputation and marketing emerge as final but critical aspects of the political vision for TS in the Ruhr Valley. Stakeholders acknowledge that the **region's image** as a post-industrial area in decline must be transformed into one of opportunity and innovation. A strong and cohesive marketing strategy is essential to changing perceptions, both domestically and internationally. As one participant explained, *"The Ruhr Valley needs to tell a new story - one of reinvention and future potential. Without a compelling narrative, we cannot attract the talent and investment we need."* This requires not only a focus on branding but also concrete actions that substantiate the region's claims of transformation. For example, highlighting successful projects, showcasing partnerships between academia and industry, and celebrating entrepreneurial successes can help build the region's reputation.

It becomes apparent that policy in the Ruhr Valley envisions an economic landscape consisting of world-class KIBS co-existing with massively reduced industrial activity, redefined to focus on high-value, specialized activities; where knowledge serves as the cornerstone of economic development; and where a culture of innovation and entrepreneurship drives endogenous growth.–The following chapter will bring this political view of TS and its outcomes into a comparison with the findings from the Basque Country, resulting in a taxonomy of policy attitudes.

5. Comparison & Policy Recommendations

5.1. Comparative Analysis of Territorial Servitization in the Basque Country and the Ruhr Valley

Both the Basque Country and the Ruhr Valley have recognized TS as a key strategy for regional economic transformation. While their industrial legacies have shaped their respective trajectories, both regions are actively seeking to integrate KIBS into their economic ecosystems. The Basque Country – and particularly the case of Bilbao – has taken a structured approach, leveraging **long-standing industrial policy frameworks**, proactive public-sector engagement, and **strong institutional coordination**. The Ruhr Valley, on the other hand, is undergoing a more gradual transformation, characterized by an evolving policy landscape, a **growing emphasis on knowledge-based economic activities**, and an increasing **recognition of the role of service-oriented firms**.

While the Basque Country has successfully embedded TS into its strategic development plans that propose a **cohesive way forwards for all innovation agents**, its **industrial culture remains somewhat conservative**, presenting challenges in fostering new forms of collaboration. The Ruhr Valley, despite facing institutional fragmentation, benefits from a large number of universities and research institutions, an ambitious **drive toward specialization**, and strong initiatives in knowledge-based economic restructuring. Both regions face challenges in talent retention, cross-sector collaboration, and the integration of KIBS, yet each offers valuable insights for advancing TS.

Geographic and Regional Identity

Regional identity plays a crucial role in shaping TS strategies in both areas. The Basque Country benefits from a strong, cohesive identity reinforced by political autonomy, which has allowed for **stable governance and a long-term strategic focus** on industrial policy. However, internal divisions within the region, such as reluctance among firms in Bilbao to engage with those in Gipuzkoa, can sometimes **limit cross-provincial collaboration**.

The Ruhr Valley, in contrast, is characterized by a polycentric urban structure, which presents both opportunities and challenges. While this diversity fosters economic dynamism and **multiple centers of innovation**, it also complicates regional branding and coordinated policy efforts. Unlike the Basque Country's singular regional strategy, the Ruhr Valley's development is influenced by various municipal and state-level policies, leading to a **more decentralized approach to TS**. However, ongoing efforts to create a more cohesive regional vision signal progress in aligning its transformation strategies.

Industrial and Business Culture

Both regions exhibit strong industrial traditions, yet their business cultures shape the integration of TS in different ways. The Basque Country **maintains a highly developed industrial ecosystem** where companies value high-quality, proven solutions. This preference for established providers fosters stability but can also slow the adoption of new service-

oriented innovations, as industrial firms tend to demand strong references before engaging with KIBS or start-ups. Despite this cautious approach, institutional mechanisms have successfully promoted **incremental KIBS integration** into the industrial landscape.

The Ruhr Valley, sharing a similar industrial heritage, demonstrates a pragmatic and results-oriented business culture. However, its **transition toward service-oriented innovation** is still evolving. While some firms remain reliant on standardized services, others are increasingly recognizing the value of KIBS in enhancing competitiveness. Unlike the Basque Country, where cluster associations or agencies such as Bilbao Ekintza play a central role in fostering collaboration, the Ruhr Valley's firms often navigate transformation more independently, reflecting the region's decentralized economic structure. Nevertheless, ongoing efforts to establish **regional networks and specialized hubs** indicate a growing commitment to fostering KIBS adoption.

Challenges in TS Policymaking and the Role of Public Actors

Policy approaches toward TS reveal key differences between the two regions. The Basque Country benefits from a well-established governance framework, where TS is embedded within broader economic strategies, including smart specialization initiatives in advanced manufacturing. **Policymakers play an active role** in fostering industry-KIBS collaboration, creating an environment where firms are encouraged to integrate services into their business models. However, some stakeholders **debate the extent to which public actors should intervene**, arguing that more organic industry-driven collaboration could enhance long-term innovation sustainability.

The Ruhr Valley's policy landscape is more decentralized, reflecting its **complex governance structure**. While some stakeholders perceive this as a challenge, others argue that it allows for greater adaptability and responsiveness to local economic conditions. Though the region lacks a single, cohesive TS strategy, multiple initiatives – such as efforts to attract KIBS and strengthen research-industry linkages – demonstrate a growing commitment to transformation. Moreover, recent shifts in policy discourse emphasize the need for long-term coordination, suggesting that the region is **actively working toward greater strategic alignment**.

Role of Intermediary Organizations

Intermediary organizations, such as cluster associations, chambers of commerce and development agencies, play differing roles in each region. In the Basque Country, these organizations act as **key facilitators of TS**, ensuring structured collaboration between industrial firms, KIBS, and research institutions. Public-sector engagement further strengthens this ecosystem by improving visibility and fostering cross-sector connections.

In the Ruhr Valley, intermediary organizations have traditionally taken a **more passive approach**, but this is beginning to change. While some stakeholders perceive a lack of clear strategic direction, recent efforts to strengthen business networks and cross-sector partnerships indicate progress. The increasing presence of regional innovation hubs and knowledge-transfer initiatives suggests that intermediary organizations are becoming more active players in TS, albeit at a different pace compared to the Basque model.

Universities and Research Integration

Both regions recognize the importance of academia in driving TS, yet their levels of integration differ. The Basque Country has established **structured collaboration mechanisms** between universities or research centers and industry, ensuring that **research outputs translate** into commercial applications. Public policy actively incentivizes these linkages, resulting in strong industry-academic partnerships.

The Ruhr Valley, despite housing a dense network of universities, has faced challenges in fully integrating academic research into its economic transformation. While collaborations between firms and universities often depend on personal networks, recent initiatives indicate a **shift toward more institutionalized partnerships**. The region's emphasis on research-driven innovation, particularly in fields like IT security and green technology, highlights an **increasing alignment** between academia and industry.

Talent Retention and Attraction

Both regions face **challenges in retaining and attracting skilled labor**. The Basque Country benefits from its strong industrial sector and urban development strategies, which enhance its appeal to high-skilled professionals. However, attracting international talent remains an ongoing challenge, as competition with other European innovation hubs intensifies. Recent efforts to develop technology parks and professional networks aim to strengthen the region's talent pool.

The Ruhr Valley, facing a more pronounced **issue of brain drain**, is actively seeking ways to improve its attractiveness to skilled professionals. While talent retention remains a challenge, initiatives focused on positioning the region as a knowledge economy signal an increasing awareness of the need to offer competitive opportunities. Investments in specialized research centers and business ecosystems indicate that the region is laying the groundwork for a more sustainable talent strategy.

Rather than viewing one model as superior, the comparison highlights valuable lessons for both regions. The Basque Country's structured governance offers insights into the **benefits of strategic alignment**, while the Ruhr Valley's evolving and adaptable initiatives showcase the potential of a **more flexible approach**. As both regions continue to refine their TS strategies, several recommendations for policy can be derived that allow for transfer into other post-industrial regions across Europe. These will be outlined in the next section.

5.2. Recommendations for policy: How to approach the change

To ensure the successful integration of KIBS into industrial ecosystems, policymakers should adopt a proactive and coordinated approach. Both the Basque Country and the Ruhr Valley share the goal of fostering a more service-oriented, knowledge-driven economy, but each face unique structural challenges. The following table delineates the key policy challenges and devises specific needs of both regions from shared policy challenges.

Table 2 Challenges and Needs for TS in both case regions

Policy Challenge	Common Issues	Basque Country-Specific Needs	Ruhr Valley-Specific Needs
KIBS Visibility	Industrial firms unaware of full KIBS potential	Strong clusters, but SMEs need better integration	Increase the focus on high-value KIBS among other sectors
Stakeholder Connection	Need for structured networking initiatives	Interesting policy actions but could enable more cross-sector ties	Matchmaking efforts urgently needed
Innovation Culture	Industrial firms slow to adopt service-led models and business conservatism for risk-taking	Need to foster and deliberate service-oriented innovations	Avoid fragmentation in initiatives
Workforce & Talent Retention	Retaining highly skilled KIBS professionals is a challenge	Connection among existing skills ecosystems and new actions for addressing gaps	Brain drain is severe; must improve work conditions and career pathways
Governance Integration	Coordination across regional levels is essential	Needs inter-provincial and inter-city collaboration	Fragmented governance structure; requires consolidation
Intermediary Role	Intermediaries play a role but lack strong evaluation mechanisms	Strengthen current intermediaries and include other ones	Passive intermediaries; need clearer mandates and impact tracking
Proactive Policymaking	Policies should anticipate shifts, not just react to them	Long-term strategy is working but needs more experimental and emergent processes	Needs more proactive policymaking approach
Strategy Documentation & Enforcement	Consistency in TS implementation and continuous monitoring	Institutionalized but could improve enforcement	Needs formalized TS strategies

Source: Own elaboration

Based on these challenges and needs, the following recommendations outline key areas of action to strengthen TS by improving governance, facilitating industry-KIBS collaboration, supporting talent retention, and reinforcing the role of intermediaries.

I. Increasing KIBS visibility and participation

One of the foremost priorities is **increasing the visibility of KIBS and their integration into industrial transformation**. Despite their potential to drive innovation, KIBS often remain underutilized due to limited awareness among industrial firms. Policymakers can develop structured initiatives such as **KIBS catalogues**, providing an accessible and comprehensive listing of available service providers. This could be complemented by **targeted networking events**, allowing industrial firms and service providers to establish direct connections and foster collaboration. Additionally, **strategic communication plans** can be designed to enhance the perception of KIBS as essential actors in economic transformation. This approach aligns with Basque strategies, which have focused on advanced manufacturing networks, while also addressing challenges in the Ruhr Valley, where **the service sector remains dominated by logistics rather than high-value KIBS**.

II. Creating platforms for connecting stakeholders

A major barrier to effective TS is the **difficulty industrial firms face in identifying relevant KIBS providers** and integrating them into their operations. To **reduce barriers to collaboration and address network failures**, policymakers should invest in bridging the cultural and structural gaps between KIBS and industrial companies. **Joint problem-solving workshops** can encourage hands-on collaboration, fostering trust and mutual understanding between firms with different operational logics. Furthermore, initiatives that **reduce search costs** – such as digital matchmaking platforms connecting firms with relevant service providers – should be introduced to facilitate business interactions. In the Ruhr Valley, where **firms often rely on standardized services rather than actively engaging with KIBS**, these initiatives can be supplemented with **financial incentives for KIBS adoption** and **sector-specific platforms** to encourage targeted integration in key industries.

III. Embracing innovation and collaboration culture

Likewise, a **cultural shift toward innovation and collaboration needs to be actively encouraged**. Industrial firms often operate within established mindsets that prioritize traditional business models over service-led innovation. Policymakers should support **awareness campaigns** that highlight the value of KIBS in driving competitiveness. Additionally, business leaders should be incentivized to participate in **innovation training programs**, equipping them with the skills necessary to navigate the changing economic landscape. By embedding a culture of continuous learning and service integration, regions can create a more resilient and adaptable industrial ecosystem. This approach is particularly relevant in the Ruhr Valley, where **risk-averse business culture and fragmented initiatives slow TS adoption**, in contrast to the Basque Country where firms are structurally encouraged to innovate, the challenge often lies on initiating new KIBS-industry collaborations for TS.

IV. Attracting and retaining workforce

The success of TS is also contingent on the ability of regions to **develop, attract and retain skilled professionals**. The demand for KIBS expertise is growing, yet both the Basque Country and the Ruhr Valley face challenges in retaining talent. **Collaborative employment and upskilling ecosystem initiatives** could be established to assess labor market needs and develop targeted policies that improve career pathways within knowledge-intensive sectors. Regions should also provide incentives for **international talent attraction**, positioning themselves as desirable locations for high-skilled professionals. In the Ruhr Valley, this could involve **strengthening professional development programs, creating structured career mobility pathways, and improving work-life conditions** to retain local talent. Urban hubs like Bilbao already serve as attractive locations for professionals, and collaborative ecosystems initiated by different Basque government bodies are being developed for addressing talent mismatch. However, the coordination among these ecosystems is still a challenge. Meanwhile, the Ruhr Valley struggles with **brain drain** – an issue that requires urgent policy attention.

V. Integrating governance efforts

Collaborative governance mechanisms are essential to overcoming territorial complexity and ensuring long-term policy alignment for TS. Given that TS is inherently complex – requiring coordination across multiple stakeholders, sectors, and levels of government – **collaboration among territorial actors must be actively fostered**. Policymakers should consider **facilitating multi-level governance structures** that ensure territorial policies consistently support KIBS-industry integration. In regions like the Ruhr Valley, where **municipal divisions can slow strategic coordination**, regional policymaking bodies can be established to unify efforts. The Basque Country, while benefiting from a more centralized approach, should also consider addressing **barriers that hinder cross-provincial collaboration including the different urban strategies**, ensuring that firms across different territories have equal access to support mechanisms. In addition, interregional learning between post-industrial areas across Europe should be encouraged, enabling cities and regions with similar challenges to exchange best practices.

VI. Increasing intermediary participation and accountability

Strengthening the role of intermediary organizations is another crucial step in enhancing TS. Development agencies, cluster associations, and innovation hubs serve as the connective tissue between industrial firms and KIBS, yet their effectiveness varies across regions. In the Basque Country, intermediaries such as cluster associations or development agencies have been instrumental in **bridging the gap between industrial firms and KIBS**. Although there is still room for improvement in the Basque case, in the Ruhr Valley, stakeholders frequently criticize intermediaries for **being too passive and lacking a clear strategic direction**. In both

regions, policymakers should address this by: (1) **Mapping out all intermediary organizations operating in the region** to fully understand their roles and contributions, (2) **actively involving these organizations in TS strategy development**, ensuring alignment with regional economic goals, (3) supporting their **capacity-building processes** to fulfill the facilitator role in KIBS-industry collaboration (4) **implementing accountability mechanisms**, to monitor the performance of intermediaries in operationalizing TS strategies, and lastly (5) **encouraging private-sector participation in intermediary organizations**, fostering a more dynamic and industry-driven facilitation network.

VII. Increasing proactivity in policymaking

Encouraging a proactive, experimental approach to policymaking is another key element of a successful TS strategy. Regions should **introduce regulatory sandboxes**, allowing firms to experiment with innovative service models in a controlled environment. Additionally, **municipal or sub-regional pilot projects** should be launched to test new TS policies before full-scale implementation. These initiatives are particularly relevant for the Ruhr Valley, where **policymaking has often been reactive rather than proactive**, in contrast to the Basque Country's **structured, long-term strategic planning model**.

VIII. Documenting and enforcing strategies

To ensure the long-term sustainability of TS, **a formalized strategy for KIBS growth needs to be institutionalized**. Policymakers should integrate KIBS and TS strategies explicitly into **smart specialization strategies**, ensuring that they are not merely an auxiliary sector but a fundamental pillar of industrial competitiveness. This requires a **sustainable multilevel governance approach**, where KIBS-related policies are consistently monitored and adjusted based on impact assessments. The **continuous and participative evaluation of policy effectiveness** will ensure that initiatives remain responsive to economic shifts and evolving industry needs.

6. Concluding remarks

The recommendations outlined in this report provide a **strategic framework for policymakers seeking to enhance TS** in **post-industrial European regions**. While derived from the cases of the Basque Country and the Ruhr Valley, their relevance extends to any region or territory aiming to integrate knowledge-intensive services into its economic landscape.

The findings of this report highlight that successful TS requires a combination of **structured governance, active policy facilitation, and a cultural shift toward collaboration and innovation**. By addressing region-specific challenges – such as **cross-provincial and inter-urban coordination in the Basque Country and institutional fragmentation in the Ruhr Valley** – these recommendations ensure that TS strategies remain adaptable to different regional contexts. Additionally, by strengthening intermediary organizations, fostering experimental policymaking, and enhancing industry-KIBS linkages, regions can **develop resilient, knowledge-driven economies capable of sustaining long-term competitiveness**. As European regions continue to navigate the complexities of industrial transformation, adopting targeted, adaptive, and forward-looking TS strategies will be key to ensuring their economic sustainability in an increasingly service-oriented global market.

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