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Designing 'context-specific' regional innovation policy: a study on the role of regional government in six European regions

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Description of the case studies

*“For me promotion of the city’s economy is a number one priority.
Of course, we have ten number one priorities”*

Ed Koch (1924-2013), former Mayor of New York City

5.1 Introduction

How to design 'context-specific' regional innovation policy is not merely a theoretical pursuit of interest to academic scholars. For the past twenty-five years, this topic has occupied policy-makers' minds in all government systems alike. As described in chapter 2, the first contours of a 'context-specific' regional innovation policy in Europe emerged in the form of two experimental programmes initiated by the European Commission by the mid-1990s: RITTS (Regional Innovation and Technology Transfer Strategies and Infrastructures) and RTP/RIS (Regional Technology Plan/Regional Innovation Strategy). The European Commission was pioneering a new approach centred on innovation bringing together two important Community policy objectives: making Europe's enterprises, small and medium-sized enterprises in particular, more competitive while simultaneously reducing the regional economic disadvantages of Europe's less-favoured regions.

Not only was the subject matter new – a policy dealing with innovation as opposed to science and technology – the subject of innovation brought in an entirely new target group, namely small and medium-sized firms, and an entirely new policy tool-set. It brought in a new rationale for government intervention to increase the innovation performance of companies and regions driven by remedying systemic failures. The latter unlocks a completely new set of policy instruments different from a market failure rationale. The way to go about designing this policy was also new: requiring a more bottom-up, collaborative, associational style of governance (Cooke & Morgan, 1998) involving all innovation-relevant actors as opposed to a hierarchical, formal, competence-based government approach. Because of these two factors, the subject matter and the required policy style, the European Commission considered the regional level the 'more suitable' policy level to design and deliver such policies (EC, 1995).¹⁸ The RITTS and RTP/RIS programmes set out to reinforce regional policy capacities. For the European Commission, stronger policy capacities were considered beneficial to arrive at stronger regional capacities for research and innovation and more effective policies.

This chapter will introduce the six case studies. All six are regions that participated in the RITTS programme between 1994 and 1998. After a short overview of the similarities and differences between the two European pilot programmes RITTS and RTP/RIS (5.2.1), section 5.2 continues with describing the RITTS programme in more detail (5.2.2), in terms of its purpose (5.2.3), funding (5.2.4), and design set-up (5.2.5). In section 5.3, the six case studies of the study are introduced. The typology developed by Tödtling & Trippel (2005) presented in chapter 2 provides the framework to describe the case studies in terms of their dominant regional innovation *problématique*, as established in Stage 1 of the RITTS project, and the policy response agreed upon by the regional stakeholders at the end of the RITTS project, in Stage 3.

Tödtling & Trippel's idealised representation of reality also allows one to compare the case studies against a theoretical benchmark at which peripheral regional innovation systems are seen to suffer first and foremost from 'organisational thinness', old-industrial systems from 'lock-in', and metropolitan systems from 'fragmentation' (see Table 2.2 in chapter 2). Each of these innovation problems is linked to specific systemic characteristics of the regional innovation system for which Tödtling & Trippel (2005) propose an ideal-typical policy mix of measures considered 'context-specific' (see Table 2.3 in chapter 2). For peripheral regional

¹⁸ "This [regional] level is more suitable for assessing the role of SMEs and for promoting innovation within them. Moreover, the movement towards decentralization has strengthened the role of regions in disseminating information and supporting innovation" (EC, 1995:29).

innovation systems, this policy mix would focus on tackling 'organisational thinness', for old-industrial systems on tackling 'lock-in', and for metropolitan systems ones on tackling 'fragmentation'.

Throughout section 5.3, a pattern matching technique is applied per region to establish to what extent the theoretical expectations concur with the real-life problem definition of innovation problems and proposed policy solutions. The results of this pattern matching are presented in Tables 5.1-5.6. The conclusions drawn from pattern matching are presented in section 5.4. The purpose of chapter 5 is to establish whether the proposition of contextualised policy-making in the area of innovation holds. Firstly, by establishing whether regional actors diagnose the systemic failures of their regional innovation system accurately, that is in line with what theory predicts in that particular innovation context. Secondly, by establishing whether regions sharing a similar innovation *problématique* design similar regional innovation policies, that is, in line with what theory predicts as a 'context-specific' approach that logically follows from the regional innovation *problématique*. Chapter 5, finally, ends with a summary section 5.5. Please note that parts of this chapter have been published previously (Corvers 1999; 2005; Corvers & Nijkamp 2003; 2004).

5.2 The European RITTS programme

5.2.1 Similarities and differences between RTP/RIS and RITTS

In the first half of the 1990s, the contours of a Europe-wide, regional-innovation-systems-related innovation policy emerged in the form of two pilot programmes initiated by the European Commission: RTP/RIS (Regional Technology Plan/Regional Innovation Strategy) and RITTS (Regional Innovation and Technology Transfer Strategies and Infrastructures). Both programmes were managed in close cooperation between the two funding Directorates-General (DG) of the European Commission: the regional policy DG, then DG XVI, later DG REGIO, in charge of RTP/RIS, and the technology policy DG, then DG XIII, later DG ENTR, in charge of RITTS.

The programmes provided regions with relatively small grants and technical support for the development of innovation strategies through a standardised process involving the support of an international team of expert consultants (Charles et al., 2000). The respective sources of funding are, the Structural Funds (Article 10 of the European Regional Development Fund (ERDF) dealing with innovative actions) for RTP/RIS, and the Fourth Framework Programme for Research and Technological Development (in particular, the SPRINT and INNOVATION programmes dealing with innovation and SMEs) for RITTS.

Both programmes brought together two important European policy objectives into one: making Europe's enterprises, SMEs in particular, more innovative while simultaneously enhancing the economic prosperity of Europe's regions through innovation. Some authors have indeed concluded that regional innovation policy is in fact a merger, the result of a gradual convergence of two previously distinct policy areas, namely technology policy and regional policy, which have both undergone a change in policy ideas (Hassink, 1992; Corvers & Nijkamp, 2000; Rutten et al., 2003). The RITTS and RTP/RIS programmes can be considered illustrative of this change in underlying policy ideas.

Both programmes combined elements of existing EU policy principles in a novel way. In European regional policy, key principles underpinning Structural Fund interventions are 'partnership' and 'subsidiarity'. The principle of 'partnership' was translated into the RTP/RIS

framework as setting out to “promote a new participative approach to policy-making with a particular view to enhancing networks of formal and informal relations among the key stakeholders in a regional economy” (Landabaso & Reid, 1999:22). The ‘partnership’ principle also entails a sharing of the costs involved between the European Commission on the one hand and national and regional authorities on the other. The second principle of ‘subsidiarity’ was translated into the RTP/RIS programme as “the regional level [being] the most appropriate for developing and delivering services to enterprises with a view to increasing the level of competitiveness of the region in a global economy” (Landabaso & Reid, 1999:22).

Europe’s technology policy was funded and implemented through the Framework Programmes for Research and Technological Development (FP). The RTP/RIS programme “drew heavily on the experience and lessons from past policy experiences in the field of RTD promotion” (Landabaso & Reid 1999:25). The Framework Programmes fund academic and industrial research, as well as activities related to transferring those research results. Experience with the FP-funded Science Park scheme, for example, had brought to the surface that technology dissemination mechanisms do not always start from the (technology) needs of firms; they tend to operate more ‘supply-push’. Small and medium-sized firms, however, tend to struggle in expressing their business needs in terms of RTDI support. The RITTS programme emerged as a follow-up to the Science Park scheme in order to help improve the operating efficiency of technology transfer (TT) infrastructures and put in place a more ‘demand-led’ system.

Despite taking different policy principles as their starting point, the RTP/RIS and RITTS programmes delivered a new, shared policy message, namely ‘innovation-led regional development’. What is funded in a RTP/RIS/RITTS project is the organisation of a process, a strategic thinking process, which is to be led by a regional authority or an equivalent regional organisation. This is a novel policy approach, as is the emphasis put on developing this regional innovation strategy in full partnership with all regional stakeholders. This so-called ‘consensus-based’ approach is assumed to shape and strengthen the region’s policy capacity: a “shift towards a regional-associative approach to learning” (Lagendijk & Rutten, 2003:204). The region offers the right setting, that is able not to “reproduce the logic of traditional behaviour proper to the central administrations but, rather, (...) to develop a system of open functioning, empower public agencies and create opportunities for discussion and the transmission of information and knowledge conducive to institutional learning” (Diez & Esteban, 2000:12). “The open inclusive process of construction, therefore, of this associative regional government, is often more important for making regional governance possible than actually having the capacity for self-government” (Amin & Thrift, 1995:56).

Both programmes provide regional policy-makers with a tool to support the development of a regional innovation strategy that is based on the identification of innovation needs of regional firms – ‘demand-led’ – and on a quality assessment of the innovation services provided by the regional innovation support infrastructure to firms – also ‘demand-led’ rather than ‘supply-push’. Innovation needs are those needs that have to be fulfilled for the firm to be able to successfully introduce a new or improved product or process into the market place and can be research-related, technological, managerial, commercial, and/or financial (RIS, 1996). The regional innovation strategy needs to be developed in full partnership with the region’s innovation-relevant actors.

In terms of financial support, there is a difference in that RITTS projects tend to have smaller budgets than RTP/RIS ones, yet both programmes administer relatively small amounts

of money and both programmes are operated on a co-funding basis. A more important difference between the two programmes is in terms of target group: RTP/RIS is intended for Less-Favoured Regions¹⁹ (LFRs) whereas RITTS is open to all regions irrespective Structural Fund criteria for eligibility.

Another important difference, at least for the purpose of this study, is that the two types of programmes also differ in terms of ‘project leader’, the type of organisation in charge of managing the process. While it is mandatory for a RTP/RIS project to be managed by a general-purpose, territorial regional government organisation, this is optional for a RITTS project. Single-purpose, functional organisations “which are not formally regional authorities, but have a formal mission regarding technology-based regional development and which can demonstrate commitment and backing from regional authorities” are equally eligible as RITTS project leader (RITTS, 1994:5).

5.2.2 The RITTS programme in detail

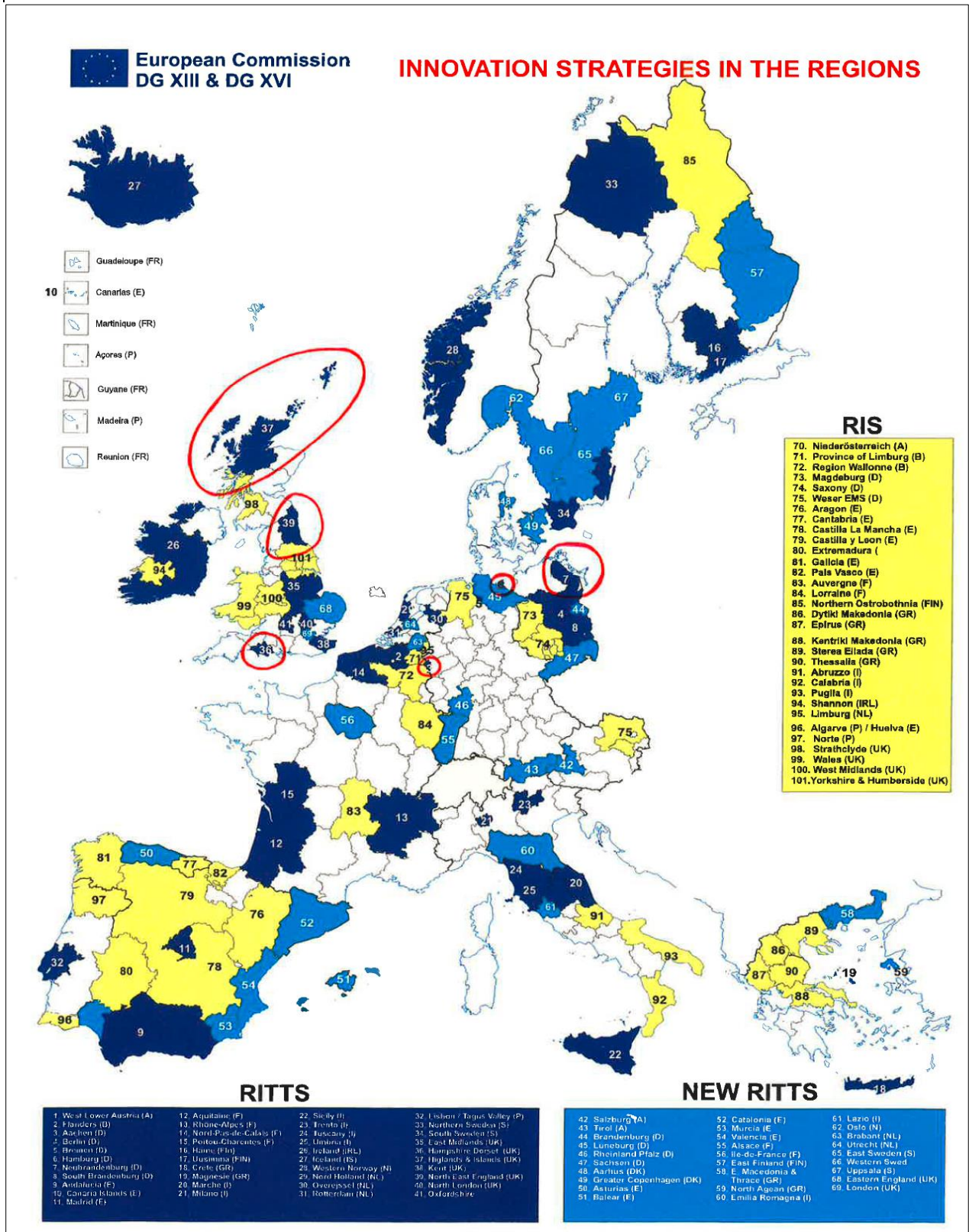
Between 1994 and 1998, three Calls for Proposals were published, resulting in three batches of RITTS projects, involving over 1,000 regional stakeholders, and worth a total estimated investment of 30 million euro (own estimation). The three batches encompassed 72 regions throughout the European Union (EU-12, later EU-15) as well as Norway and Iceland (members of the European Economic Area).

The first RITTS programme was launched in 1994 and the first batch of RITTS of 1994-1996 (emerging from the 1994 Call for Proposals) encompassed 22 selected projects. The second batch of 1996-1998 (emerging from the 1995 Call for Proposals) encompassed 21 selected projects. The third batch of 1998-2000 (emerging from the 1997 Call for Proposals) encompassed 29 selected projects. This brought the total number to 72 RITTS project proposals selected from the European Union regions and those from the equally eligible European Economic Area. Map 5.1 below gives an overview of all participating RITTS regions following the third Call for Proposals in 1997 (the latter are referred to as ‘new RITTS’ to distinguish them from the first and second batch of selected RITTS projects referred to as ‘RITTS’). The difference between the 72 selected proposals mentioned before and the 69 RITTS projects mentioned on the map stems from the fact that some RITTS proposals had not yet materialised in a signed contract at the time the map was drawn. On the map, all RITTS projects are indicated in blue, and all RTP/RIS regions are in yellow, while the six RITTS projects included in this study are circled in red.

After 1998, new Calls were launched under the RITTS umbrella, but the focus of European support moved beyond the strategic framework for action towards concrete implementation of new measures and projects (RIS+). Further developments included the Transregional Innovation Projects and the Transnational Innovation Strategy Projects under the Fifth Community RTD Framework Programme, aiming to encourage the transfer of experience from RITTS/RIS regions to partner regions in the accession countries. At the early 2000s when the third batch of RITTS projects was ending, the RITTS programme had ceased to exist in the format under investigation here.

¹⁹At the time of RITTS, ‘Less-Favoured Regions’ (LFRs) were defined as peripheral regions (Objective 1 ERDF), rural (Objective 5b ERDF), reconversion (Objective 2 ERDF), and regions whose GDP was 75% or less of the EU average GDP.

Map 5.1: Overview of RITTS regions (1994-2000)



Legend: the six RITTS projects included in the study are circled in red.
Source: European Commission, internal memo, 1997

5.2.3 The purpose of RITTS

The explicit purpose of the RITTS programme is to enhance the “operating efficiency of the regional innovation and technology transfer support infrastructures and policies” towards satisfying firms’ innovation needs, particularly those of SMEs. RITTS has been set up (RITTS, 1994:35-36) in order to achieve this:

- to “provide local and regional governments and/or development organisations with support in the analysis and/or development of their innovation and technology transfer support infrastructure by offering them access to advice from experienced Community experts”;

- in order to achieve that, the EC provides financial support to “local or regional governments and/or development organisations willing to set up a transnational team of experts to review the design, impact and effectiveness of technology diffusion organisations and services that constitute the regional technology transfer and innovation support infrastructure and the interaction among them, to develop strategies aimed at improving this infrastructure, and to share experience in this area”.

Particular emphasis is laid on (RITTS, 1994:36):

- “the analysis of expressed and latent needs of firms, and in particular of the smaller companies along with those which do not usually implement innovation projects”,

- “the necessary work for maximum coherence in the assignments, the goals and the modes of intervention of transfer structures and local, regional and national actors, which act as the sponsors or financiers to these assignments”.

The development of this regional innovation strategy should be the outcome of a process that involves all the regional actors related to RTD, innovation, and associated business support activities – hence ‘consensus-based’ – such as local and regional governments, local and regional economic development organisations, regional representatives of national agencies in charge of innovation, technology, science, economic and/or regional policy, central government ministries in those areas, research organisations, higher education institutes, technology transfer organisations, innovation support organisations, large businesses, R&D laboratories, business associations, and trade unions.

According to the specifications in the RITTS programme, a regional innovation strategy developed in the framework of RITTS should reflect:

- A *bottom-up* approach: it should be demand-driven, based on strengthened dialogue between firms, particularly SMEs, regionally-based research, and technology transfer organisations and the public sector in order to assess the needs (expressed and latent) of regional firms and to aim at meeting these needs effectively.²⁰

- A *regional* approach: there should be a specific territorial dimension that takes full account of the national and international context; the starting point should be the strengths and weaknesses of the regional economy. Perhaps more importantly, RITTS should build a consensus at the regional level on the priorities for action between the principal actors involved.

²⁰ Needs were not limited to technological issues, but could include managerial, financial, commercial, training, and organisational issues.

- A *strategic* approach should be applied to regional development in the fields of technological progress and innovation. They should plan for short and medium term actions that fit with the long-term objectives and priorities defined by the region. RITTS involves not only the completion of a study, but above all requires the production of an action plan.

- An *integrated* approach: the efforts of the public sector (local, regional, national, and European) and the private sector should be linked to the common goal of increasing regional productivity and competitiveness. These efforts should try to maximise the economic impact of regional, national and European programmes.

- An *international* approach: a RITTS should adopt an international perspective in terms of the analysis of global economic trends as well as on the need to co-operate nationally and internationally to be more effective in the field of RTD and innovation. The research and analyses in a RITTS project are to be undertaken by a team of regional, national, and European experts to ensure an objective assessment.

5.2.4 The funding of RITTS

The source of funding of the RITTS programme was the SPRINT Programme (RITTS 1994 Call for Proposals) and its successor the INNOVATION Programme (RITTS 1995 and 1997 Calls). Both programmes are part of the Fourth Framework Programme for Research and Technological Development (1994-1998), which brings together all EU programmes and resources dealing with RTD activities at Community level. One of the objectives of the INNOVATION Programme was to promote an environment favouring innovation and the absorption of technologies, especially by interacting with the network of authorities, structures, and bodies that, at local or regional level, contribute to the optimisation of the innovation system and to the definition and implementation of policies to promote innovation and technological development.

Community funding for RITTS projects would not exceed 50% of the cost of a RITTS project. The maximum contribution would be 250,000 euro in ERDF-assisted²¹ areas and 175,000 euro in non-assisted areas.

RITTS aimed at enhancing the operating efficiency of the regional innovation and technology transfer support infrastructures and policies towards satisfying firms' needs, particularly those of SMEs. Although new schemes or structures could be an outcome of the RITTS exercise, the emphasis was on optimising the existing regional infrastructures and policies rather than on increasing the level of regional resources dedicated to supporting R&TD, technology transfer and innovation. In addition, it examined the efficiency of policies directed at these issues and the allocation of resources and tasks within the region's SME support infrastructure directed at innovation, technology diffusion, and exploitation.

5.2.5 The staged approach of RITTS

While RITTS was not conceived (and neither was its sister programme RTP/RIS) to put into practice the regional innovation systems concept, the influence of this concept as a tool for systematic analysis and policy development is clear in RITTS's methodological approach. The work to be undertaken within a RITTS project had to comprise five interdependent themes.

²¹ ERDF = European Regional Development Fund; regions assigned as Objective 1, 2, 5b area were eligible for a maximum co-financing amount of 250,000 euro within the framework of RITTS.

To the European Commission these core specifications had to be met in order to facilitate a successful implementation of the policy. These five interdependent themes are:

1. Building regional consensus. This should include a communication strategy to raise awareness within the region with regard to the exercise, involving the main stakeholders concerned, keeping them informed of the progress of the exercise and seeking their opinion and feedback. A Steering Committee should be set up as a major tool to build this consensus.
2. The identification of regional firms' needs (expressed and latent). This work should take into account, among other things, the impact of global market and technology trends on the regional economy.
3. An analysis of the regional supply in terms of innovation and technology transfer support services as well as of the pure R&TD resources. This part also includes an analysis of the strategies of the main regional actors.
4. Based on the work undertaken with regard to the previous themes (in particular the strengths and weaknesses analysis of regional firms, of an assessment of the regional technology and innovation support demand, an identification of the gaps and duplications in the technology and innovation support supply, etc.), the Steering Committee and external experts will define a strategic framework and agree upon priority actions.
5. The last theme is the initial implementation of actions defined and the definition and setting up of a monitoring system that will help to monitor and evaluate the actions undertaken.

The work to be done on the five interdependent themes is divided into three successive stages (stages 0, 1, 2), similar to a classic policy cycle. A RITTS project is expected to last up to 18 months in total (in reality, RITTS projects took on average 24 months). 'Loop back' was expected to take place between the three stages.

Stage 0: this is the definition stage and can last up to 3 months. It should be used to prepare the rest of the exercise and finalise the various parts of the work programme. It can include:

- The setting up of the Steering Committee (informing and winning commitments from various members);
- A work programme with clear milestones, timetable, budget, and a description of the various studies and, surveys to be carried out;
- The exact composition of the project team (management unit, staff, and external consultants to be involved in the project), together with the exact role of each of them.

Stage 1: this is the information gathering and assessment phase, including themes such as the analysis of regional firms' needs and the analysis of the regional Innovation and Technology Transfer (ITT) support supply. The information should identify the structure and relevance of region's innovation system with respect to demand, international linkages/orientation, potential obstacles to a regional consensus, and similar issues. The purpose of this stage – which lasted on average between 6 and 9 months – is to:

- provide the basis for a decision as whether or not to proceed to the next detailed stage;
- help solicit support for the initiative;
- provide a basis for developing a plan of action.

Stage 2: this stage is concerned with establishing regional priorities as a result of a regional debate and the validation of Stage 1 results, as well as with starting to implement priority

actions and setting up an evaluation and monitoring system. Its normal duration should be about five or six months. The purpose of Stage 2 is to provide a blueprint for the development and launch of the regional innovation strategy, defining the role of each party involved in the implementation and operation. It should, therefore, include:

- the presentation of priority actions (including those with an international dimension) and of their coherence as a whole;
- the detailed presentation of the leading stake holders and of their role in the defined priority actions.

The above outlines the European Commission's original idea to have a Stage 0 to prepare the set-up of the RITTS project, an information gathering Stage 1 to define and discuss the problem, and a Stage 2 concerned with policy formulation, policy decision, and proposing the modalities of the policy implementation and policy monitoring and evaluation. In practice, the activities to be undertaken in Stage 2 often proved too many for the limited time assigned to Stage 2, and regions decided to add a Stage 3. Originally, the 'three-staged RITTS policy process' referred to the Stages 0, 1, and 2 in the RITTS programme as outlined above. In practice, many regions decided to split Stage 2 and add a Stage 3 to cope with the many mandatory tasks in a RITTS project, particularly in Stage 2. Therefore, when reference is made to the 'three-staged RITTS policy process' in this study, the new definition is meant. That is: Stage 1 is about data collection and analysis (getting to a problem definition), Stage 2 is about policy formulation and stakeholder consultation (generating, presenting, and debating the different policy options), and Stage 3 is about deciding on the final policy mix of measures and their implementation modalities.

5.3 Description of the case studies

5.3.1 RITTS Neubrandenburg

RITTS Neubrandenburg makes up, together with RITTS Highlands and Islands, the two peripheral region cases of this study. Both RITTS projects represent regions that are located at the periphery of the European Union, in their respective country (Germany and the United Kingdom), and even within their respective region (Mecklenburg-Vorpommern and Scotland). The regions' innovation systems are characterised by 'organisational thinness', lacking innovation-relevant players and processes, set in a wider context of unfavourable socio-economic conditions. Please note that the factual description of all six case studies is at the time of the RITTS projects.

5.3.1.1 The RITTS region

RITTS Neubrandenburg is situated in the far east of Germany, in the eastern part of the State (*Land*) Mecklenburg-Vorpommern, a predominantly rural region, bordering Poland and the Baltic Sea. The RITTS Neubrandenburg comprises 631,000 inhabitants (1996 data), and the two main city centres are Neubrandenburg, with approximately 67,500 inhabitants, and Greifswald, with approximately 53,500 inhabitants (1996 data). The *Land* Mecklenburg-Vorpommern is one of the smallest German States in terms of total population, with under two million inhabitants (1,820 million inhabitants, 1996 data) and by far the least populated

State, with a population density of 79 inhabitants per km² compared to the German average of 230 inhabitants per km² (1996 data).

Neubrandenburg is part of Mecklenburg-Vorpommern, one of the 16 States (*Länder*) of the Federal Republic of Germany. Mecklenburg-Vorpommern lacks the meso-level of *Bezirksregierung* and is sub-divided into twelve *Landkreise* or rural districts, of which the following five participate in RITTS Neubrandenburg: Ostvorpommern, Uecker-Randow, Mecklenburg-Strelitz, Müritzt, and Demmin. In addition, the *Land* Mecklenburg-Vorpommern has six independent urban districts, also known as *kreisfreie Städte* of which two participate in RITTS, namely Neubrandenburg and Greifswald.

5.3.1.2 The RITTS project

RITTS Neubrandenburg was among the 21 RITTS proposals selected following the second Call for Proposals in 1995. The proposal was submitted by TITAN, short for *Technologie- und Innovations-Transfer-Agentur Neubrandenburg e.V.*, the regional technology and innovation agency based in Neubrandenburg. RITTS Neubrandenburg officially started in December 1996 (with the signing of the contract between TITAN and the European Commission services) and ended 29 months later in May 1999 (with the submitting of the final report of the RITTS project to the EC).

The borders of the Neubrandenburg RITTS project are those of the Neubrandenburg Chamber of Commerce and Industry (*Industrie- und Handelskammer*) *IHK* area, an important actor representing the region's enterprises, the main intended clients of the region's TT and innovation support infrastructure. The borders of the Neubrandenburg *IHK* area coincide with those of the five participating *Landkreise* and the two *kreisfreie Städte*. The RITTS Neubrandenburg region is an *IHK* region and as such a 'functional' construct.

5.3.1.3 The RITTS project leader

By virtue of being the countersigning party in the contract with the European Commission services, TITAN is the legal representative of the RITTS Neubrandenburg region. TITAN is a technology transfer organisation, a single-purpose, functional regional government actor, established by government decision. TITAN receives funding from the federal Ministry for Economic Affairs and Employment (*Bundesministerium für Wirtschaft und Arbeit*, *BMWA*) depending on market-generated income from client companies willing to pay for the technology transfer services TITAN offers. TITAN is one of the 13 *Agenturen für Technologietransfer und Innovationsförderung (ATI)*, technology transfer and innovation support agencies established by the Ministry for Economic Affairs and Employment (*BMWA*) in all five new States (*neue Bundesländer*) after the German unification. The main mission of all ATIs was to implement the Ministry's regional economic objectives in the new States by strengthening the innovation capacity of SMEs in those regions. Supporting networking among SMEs and between SMEs and research institutes was an explicit objective of the ATIs.

5.3.1.4 The region's innovation *problématique*²²

The regional innovation system of the RITTS Neubrandenburg region shares the innovation

²² The data originate from the RITTS 133 Stage 1 report (1997).

problématique of a peripheral region. The system's deficiencies – sketched below – mainly relate to the system's 'missing' elements, notwithstanding the possible presence of other innovation problems as well.

Of those firms that had managed to survive the forces of competition in the enlarged German domestic market after reunification in 1990, the majority lacked the necessary innovation capacities. With the majority of firms being small and medium-sized enterprises, 60% of this group is not interested in or not capable of undertaking any form of innovation activity (RITTS 133 Stage 1 report, 1997). A further 30% is aware of the importance of technology and innovation for the company's success and survival, yet need help in articulating their innovation needs. Only 10% of this group can be characterised as dynamic, innovative, technology-leading firms that manage innovation as a strategic asset, but the system is unable to cater for their need for external capital to fund their innovation ideas. Technology-oriented business start-ups are rare, in part because the overall business climate is deficient in nurturing these types of endeavour.²³

In the years immediately after the *Wende*, the Fall of the Berlin Wall, government actors at federal and *Landes* level invested in building up a technology transfer and innovation support infrastructure in the region, based on the idea that these firms would benefit most from technology transfer services and external innovation-related consulting. In practice, the ITT (Innovation and Technology Transfer) agencies that make up the public support system have proven unable to offer their services beyond the small group of firms that are already innovation-aware. Focusing predominantly on these firms has reinforced the orientation of the ITT support infrastructure catering to these 'usual suspects'. Equally missing is the interconnection between the ITT intermediaries and other knowledge providers in the region. This is regrettable considering that this region is well endowed in terms of knowledge infrastructure.

Besides multiple ITT agencies, technology transfer, competence, and incubator centres, as well as *Technika* centres involved in research and consultancy, the region is home to many research organisations. The seven public research institutes located in the region include the *Max-Planck-Institut für Plasmaphysik* in Greifswald with around 400 employees. Another such institute is the *Leibniz-Institut für Plasmaforschung und Technologie*, at the time of the RITTS project the largest stand-alone public research facility in Europe on this topic. There is also the *Ernst-Moritz-Arndt University*, founded in 1456, with 6,790 students enrolled (1999 data), divided over five Faculties: Theology, Philosophy, Law, Medicine, and Mathematics and Sciences. At best, these institutions are a partner for the larger enterprises in the region and the (few) more innovative SMEs, but for the majority of regional companies – due to a lack in absorptive capacity²⁴ – these organisations are irrelevant, belonging to a different world. The insufficient qualification levels of employees within companies – below the level of managing director – is neither helpful in engaging in meaningful collaboration with research institutes located in the region.

²³ The region's industrial structure was compared to neighbouring rural Schleswig-Holstein in the 1970s and "business activity will have to be expanded and new industries attracted if the economic survival of the entire region is to be guaranteed" (EUROSTAT Portrait of the Regions, 1993:72).

²⁴ The absorptive capacity of firms refers to their ability to recognise the value of new, external information, assimilate it, and apply it to commercial ends (Cohen & Levinthal, 1990). Absorptive capacity depends greatly on prior related knowledge held by the firm and is considered cumulative, meaning future absorptive capacity will benefit from past efforts to develop absorptive capacity.

Table 5.1 positions the peripheral RITTS Neubrandenburg region vis-à-vis the region's main innovation system deficiencies based on the Tödting & Trippel (2005) typology of regional innovation system types as presented in chapter 2.

Table 5.1: Pattern matching of regional innovation <i>problématique</i> by regional innovation system type – PERIPHERAL REGIONS			
	Type of regional innovation system:		
	Peripheral regions suffering from 'organisational thinness' as a systemic deficiency	DE: Neubrandenburg	UK: Highlands and Islands
System deficiencies:			
Knowledge application and exploitation sub-system ('knowledge users'): firms and regional clusters			
Cluster characteristics	Clusters often missing or weakly developed	√ YES	√ YES
	SME dominance	√ YES	√ YES
Innovation activities	Low level of R&D and product innovation, emphasis on incremental and process innovation	√ YES	√ YES
Knowledge generation and diffusion sub-system ('knowledge creators'): higher education, research organisations, intermediaries			
Universities/research organisations	Few or low profile	x NO, region is well endowed	√ YES
Education/training	Emphasis on low- to medium-level qualifications	√ YES	√ YES
Knowledge transfer	Some services available but in general 'thin' structure; lack of more specialised services	x NO, over-supply	√ YES
	Often too little orientation towards demand	√ YES	√ YES
Networks within and between the sub-systems			
Network characteristics	Few in the region due to weak clustering and 'thin' institutional structure	√ YES	√ YES

Based on Tödting & Trippel (2005); Martin & Trippel (2014).

5.3.1.5 The proposed innovation policy solution

The final policy output of the RITTS Neubrandenburg project for which regional consensus could be mobilised within the Steering Committee consisted of the following measures:

- 'Coordination of a regional ITT network':
 - Building up a network of technology transfer and innovation support providers by organising four meetings per year to be coordinated by TITAN;
 - Redefining the missions of TITAN and ATI Küste in line with the 'regional coordination' strategy;
- 'SME Visitors Programme':

- Upgrading the qualifications of all ITT actors by teaching them how to conduct an innovation audit that aims to help SMEs articulate their latent innovation needs;
- Carrying out an innovation audit in 35 regional SMEs by all regional ITT organisations as a pilot that could be scaled up to 300 audits over the following three years;
- Developing a European project proposal for the RIS programme on behalf of the Land Mecklenburg-Vorpommern, thereby integrating the RITTS experience.

Table 5.2 positions the proposed policy response in RITTS Neubrandenburg vis-à-vis the one suggested by the literature as a ‘context-specific’ way of tackling the region’s main innovation system deficiencies (Table 2.3 in chapter 2). Please note that the areas left blank in the table – that is, not covered by any of the agreed RITTS policy measures – are as telling as those that are covered.

Table 5.2: Pattern matching of regional innovation policy responses by regional innovation system type – PERIPHERAL REGIONS			
	Type of regional innovation system:		
	Peripheral	DE: Neubrandenburg	UK: Highlands and Islands
Policy dimensions:			
Strategic orientation of regional economy	Strengthening/upgrading of regional economy	Strengthening local firms’ ability to compete in a free market economy after Germany’s reunification	Strengthening the region’s underdeveloped innovative capacity
Innovation strategy	‘Catching-up learning’ (organisation, technology)		Establishing a strong research-based university in the region
	Improve strategic and innovation capabilities of SMEs	SME Visitors Programme: #Undertaking innovation audits in 35 SMEs (with possible scaling up to 300 audits in next 3 years)	#Put in place Innovation and Technology Counsellors Inter-firm networking: #mentoring for firms from outside the region
Firms and regional clusters	Strengthen potential clusters in the region		
	Link firms to clusters outside the region		
	Attract innovative companies		
	New firm formation		
Knowledge providers	Attract branches of national research organisations with relevance to the regional economy		Set up Research Trusts at the Further Education Colleges in: #information technology #environmental research #marine resources/aquaculture
Education/skills	Build up medium-level skills (e.g. technical colleges, engineering)	SME Visitors Programme: #Upgrading skills of ITT organisations to undertake innovation audit	#Upgrade internal capabilities of Further Education Colleges to undertake TT and

	schools, management schools)		consultancy projects in firms #Have Further Education Colleges develop business partnership programmes in dialogue with leading SMEs
	Mobility schemes (e.g. 'innovation assistants' for SMEs)		Enlarge the Teaching Company Scheme (student placement programme) to: # include Further Education Colleges #increase firms' involvement in Teaching Company Scheme
Intermediary TT organisations		Supply-driven: #Building up and coordinating a regional ITT network chaired by RITTS project leader; #Redefining the missions of RITTS project leader's organisation, head office and regional office (<i>Zweigstelle</i>)	
Networks	Link firms to knowledge providers and transfer agencies inside the region and beyond, demand-led approach		Inter-firm networking: #'mini' networks among firms along common agendas #'macro' networks that tap into national/international advice and expertise for firms
Other		Developing a new RIS proposal for the Land Mecklenburg-Vorpommern, incorporating RITTS experience, funding requested from DG REGIO	

Based on Tödttling & Trippel (2005); Martin & Trippel (2014).

5.3.2 RITTS Highlands and Islands

RITTS Highlands and Islands is the second peripheral region case of this study.

5.3.2.1 The RITTS region

The Highlands and Islands is the most peripheral region in the United Kingdom, situated in the northern part of Scotland – also known as the Scottish Highlands. Located at the north-western extremity of Europe, it is also one of Europe's most geographically peripheral regions. The Islands are an archipelago of nearly 100 islands off the Scottish mainland in the North Sea (the Orkney and Shetland Islands to the north, north-east) and the Atlantic Ocean (the Inner and the Outer Hebrides to the west, the latter also known as the Western Isles). The Islands

are accessed from mainland Scotland by ferry and airplane, with both travel modes being dependent on good weather conditions.

Highlands and Islands are one of the four composite sub-regions of Scotland and the least populated area within both Scotland and the United Kingdom. Outside Scandinavia, it is the least populated EU region, with 9.5 inhabitants per km² and with some areas as low as 2 inhabitants per km² (HIE, Dec 1999). The land area covered by Highlands and Islands is more than half of Scotland, home to approximately 430,000 people and the RITTS Highlands and Islands is one of the smallest RITTS projects in terms of population. The largest town is Inverness with around 40,000 inhabitants. The city serves as the capital and administrative centre of the Highlands and houses the Highland Council, which at the time of the RITTS project was the local government authority for much of the Scottish Highlands, one of Scotland's 32 unitary authorities.

5.3.2.2 The RITTS project

RITTS Highlands and Islands was among the 19 RITTS proposals selected following the first Call for Proposals in 1994. The proposal was submitted by HIE, Highlands and Islands Enterprise, which is the government's economic development agency for this part of Scotland. At the time of the RITTS application, HIE was an executive agency of the UK national government. During the RITTS project, the 1994 Government Act establishing a Scottish Parliament and Scottish government was adopted and as of April 1996 HIE became the Scottish economic development agency in charge of executing the aims and objectives set out by the Scottish Government.

The RITTS project officially started in December 1994 (with the signing of the contract) and ended 17 months later in May 1996 (with the submitting of the final report of the RITTS project to the EC).

The borders of RITTS Highlands and Islands are those of Highlands and Islands Enterprise (HIE). The area covered by HIE are: Scottish Highlands, Shetlands Islands, Orkney Islands, Outer Hebrides, Caithness and Sutherland, Inverness, Isle of Skye, Lochaber, Argyll, and Moray. The area covered by HIE consisted of three types of local government in the Highlands and Islands region at the time of the RITTS project. These are: the Highland Regional Council representing the Scottish Highlands; three Single Tier local authorities representing the Islands, which are the Western Isles or Hebrides, Orkney and Shetland; and 14 area-based District Councils, subdivisions of the Regional Council area.

5.3.2.3 The RITTS project leader

By virtue of being the countersigning party in the contract with the European Commission services, HIE is the legal representative of the RITTS Highlands and Islands region. HIE is a single-purpose, functional regional government actor, funded by the Scottish Office, the central government representation of Scotland. The mission of HIE is "to unlock the region's potential present in its 19,000 businesses and over 8,000 voluntary and community groups and help create a strong, diverse and sustainable economy" (HIE, Dec 1999).

5.3.2.4 The region's innovation *problématique*

The regional innovation system of the RITTS Highlands and Islands region shares the regional Innovation *problématique* of a peripheral region. Also here, the system's deficiencies – sketched below – mainly relate to the system's 'institutional thinness', notwithstanding the possible presence of other innovation problems as well.

The region is sparsely populated, with remote and difficult accessible areas, characterised by out-migration, an economic structure dominated by a few key sectors, a heavy reliance on the public sector as the main regional employer, and a large majority of companies being SMEs. The majority (86.7%) of private sector employment in the RITTS Highlands and Islands region is in companies with 200 employees or fewer. Regional firms demonstrate, overall, a low innovative capacity, and they produce mainly for local consumption and are not widely exposed to sophisticated users driving innovation. The majority of companies do not undertake in-house R&D, but unlike RITTS Neubrandenburg, firms do perceive innovation as key to long-term competitiveness and sustained growth. The few large enterprises present are considered as keeping the region in a state of economic vulnerability and are viewed more as a cause of concern than a source of innovation and competitiveness. Among the innovation obstacles mentioned by the companies surveyed are the difficulty to obtain financial support for innovation projects, the absence of regional clusters, with the exception of the fish farming sector, and the lack of inter-firm networking among local companies within the region.

Similarly to RITTS Neubrandenburg, companies regard the public-funded technology transfer and innovation support infrastructure as being of little help in addressing these close-to-their-heart issues and as biased towards catering to 'the usual suspects'. Apart from the staff training schemes provided for by the HIE and the LECs that are considered helpful, firms point out the lack of structured support for R&D and innovation in the region welcoming a more permanent, relations-based dialogue with ITT support organisations on all strategic business issues (innovation, R&D funding, staffing, technology scanning, market analyses, market access, and the like).

Unlike RITTS Neubrandenburg, most of the research organisations and higher education institutes of potential use to regional companies are located outside Highlands and Islands. While other parts of Scotland have their 'own' university, the RITTS project leader saw RITTS as a tool to help develop a networked, 'collegiate university' from the existing Further Education Colleges and to develop an infrastructure of support services to assist SMEs in exploiting such a new university construct.

Table 5.1 positions the peripheral RITTS Highlands and Islands region vis-à-vis the region's main innovation system deficiencies based on the Tödting & Trippel (2005) typology of regional innovation system types as presented in chapter 2.

5.3.2.5 The proposed innovation policy solution

The team of experts pointed out that the regional innovation system is very 'atomised': large enterprises are stand-alone elements in the regional economy; the majority of companies are SMEs reluctant to collaborate with one another (which is not helped by the region's rugged topographical traits); and the public sector support for innovation is relatively underdeveloped and poorly integrated, lacking qualified staff to address more demanding

innovation support requests. The final output of RITTS Highlands and Islands was less a 'regional innovation strategy' than it was a collection of recommendations from the team of experts to the Steering Group. The team of experts emphasised the importance of continuing with those initiatives already underway, such as the efforts undertaken to develop a telecommunications infrastructure in the Highlands and Islands regions to overcome the region's isolation. As far as new initiatives were concerned, the team of experts recommended three areas of action:

1) Networking: to better interlink the atomised elements of the Highlands and Islands regional innovation system, in particular inter-firm networking by:

- setting up 'mini' networks among four or five firms along common agendas of business needs;
- organising 'macro' networks to connect the region to national and international networks of technology support and expertise and make its knowledge available to firms;
- schemes for mentoring by outsiders to the region.

2) Teaching Company Scheme: making better use of the possibilities of technology transfer via 'people', in particular by:

- enlarging the Teaching Company Scheme (TCS), a student placement programme, to include the Further Education Colleges;
- increasing the Highlands and Islands companies' involvement in the Teaching Company Scheme;
- upgrading the internal capabilities of the Further Education Colleges so they can perform meaningful technology transfer and consultancy projects for companies;
- having these Colleges develop business partnership programmes together with leading SMEs;
- hiring new staff to act as Innovation and Technology Counsellors – inspired by Norway's experience with Technology Attachés – to coach companies.

3) Research Trust: setting up three research trusts at the Further Education Colleges to strengthen the region's research capacity by creating critical mass in specific research areas relevant to the local economy: information technology, environmental research, and marine resources. Concerning the latter, developing an integrated aquaculture/food cluster was seen as particularly promising in view of existing regional strengths. All three Research Trusts would work under an overarching Research Trust Board, comprised of senior figures from the public and private sectors, heads of the Further Education Colleges, and the Research Trust units. The Highlands and Islands Enterprise would act as the board's secretariat.

Table 5.2 positions the proposed policy response in RITTS Highlands and Islands vis-à-vis the one suggested by the literature as a 'context-specific' way of tackling the region's main innovation system deficiencies (based on Tödtling & Trippel (2005) as presented in chapter 2).

5.3.3 RITTS Aachen

RITTS Aachen constitutes, together with RITTS North East of England, the two old industrial region cases included in this study. Both RITTS projects represent regions whose regional

economy had been going through reconversion and restructuring since the late 1970s and early 1980s. Unlike peripheral regions, old industrial regions are organisationally 'thick' with dense networks among all innovation-relevant players, but which are unfortunately in mature, declining industries and out-dated technologies. The region's innovation system is characterised by various forms of 'lock-in'. The system is in (desperate) need of reorientation, yet its ability to react to new changing circumstances, its ability to take decisions about the future are impacted by the way the system has been set up in the past, resulting in particular patterns of present-day interaction ('path dependency').

5.3.3.1 The RITTS region

The Aachen RITTS region is situated in the south-western part of Germany's largest and most industrialised *Land* Nordrhein-Westfalen and borders on Belgium and the Netherlands. The Aachen RITTS region covers the greater Aachen area and has a population of 1.212 million inhabitants on a surface of 3,535 km² (resulting in 343 inhabitants per km²; EUROSTAT 1994 data). Having a population of over one million, the Aachen RITTS region is among the larger RITTS projects in terms of population.

The territory served by RITTS Aachen is located in the *Land* Nordrhein-Westfalen. At the meso-level, the State of Nordrhein-Westfalen consists of five administrative regions (*Regierungsbezirke*), divided into 31 districts (*Kreise*) and 23 urban districts (*kreisfreie Städte*) at the local government level. RITTS Aachen belongs to *Regierungsbezirk Köln*, one of the five administrative regions of the State Nordrhein-Westfalen. The borders of RITTS Aachen are those of the *Kreise* Aachen, Düren, Euskirchen, and Heinsberg as well as *kreisfreie Stadt* Aachen. This is also the territory served by the regional development agency AGIT, the project leader of RITTS Aachen. The borders of the Aachen RITTS project also coincide with those of the *IHK Kammerbezirk* Aachen, a district according to the regional structure of the Chamber of Industry and Commerce (*Industrie- und Handelskammer, IHK*), which includes the same five sub-regions.

5.3.3.2 The RITTS project

RITTS Aachen was among the 19 RITTS proposals selected following the first Call for Proposals in 1994. The proposal was submitted by AGIT, short for *Aachener Gesellschaft für Innovation und Technologietransfer mbH*. AGIT is the regional development agency with a special focus on technology-oriented enterprises.

The project officially started in December 1994 (with the signing of the contract between AGIT and the European Commission services) and ended 23 months later in November 1996 (with the submitting of the final report of the RITTS project to the EC).

5.3.3.3 The RITTS project leader

By virtue of being the countersigning party in the contract with the European Commission services, AGIT is the legal representative of the RITTS Aachen region. Being a single-purpose, functional regional government actor, AGIT is in the same category of RITTS project leader types as Neubrandenburg's TITAN and Highlands and Islands' HIE, in charge of technology-driven regional development.

In terms of funding, AGIT's main shareholders and finance providers are: the City (*Stadt*) Aachen, Districts (*Kreise*) Aachen, Düren, Euskirchen, Heinsberg, the Chamber of Industry and Commerce (*IHK*) Aachen, and the Chamber of Crafts and Trade (*HWK*) Aachen.

As far as designing and funding regional innovation policy is concerned, at State level the key political actor is the Ministry of Economic Affairs, Technology, and Transport (*Ministerium für Wirtschaft, Mittelstand, Technologie*, or *MWMTV*). Above the State level, it is the federal Ministry of Economic Affairs (*Bundesministerium für Wirtschaft und Technologie*, or *BMWi*). This Ministry is in charge of improving the framework conditions for innovation, as well as being an important source of funding for specific technology areas.

5.3.3.4 The region's innovation *problématique*²⁵

The regional innovation system of the RITTS Aachen region shares the innovation *problématique* of an old industrial region, notwithstanding the possible presence of other innovation problems as well. Although being institutionally and organisationally 'thick', this region type is 'locked' into an outdated pathway to economic growth. In RITTS Aachen, the majority of regional companies, predominantly SMEs, experience increasing global competitive pressure, yet innovation is not part of their survival strategy. In most cases innovation is regarded as 'additional to' the cost-cutting strategies they continue to employ. To the extent firms develop an innovation strategy as such, its focus is on incremental, process-oriented innovations. Inter-firm networking rarely happens for reasons other than 'client-supplier' relations with the larger enterprises.

Collaboration between regional companies and ITT intermediary organisations is biased towards a small group of predominantly 'high-tech' and 'new-tech' companies, mainly located in the Aachen *Stadt* and *Kreis*. Many public-funded innovation support and technology transfer organisations are in competition over this group, providing similar types of services in an uncoordinated fashion. As a result, an estimated 10% of the regional firms are served well (and repeatedly) by these ITT organisations. However, the majority of companies – the ones that have difficulty in understanding and expressing their innovation needs and for which the support was set up in the first place – are left to their own devices, as their needs do not match the services on offer.

The lack of absorptive capacity and technology management skills in the majority of SMEs results in the inability to benefit from technology transfer '*über den Köpfe*' (via hiring staff). Only 10% of academic graduates who have studied at one of the region's higher education institutes are employed in the region. This is a seriously missed opportunity given the stock of qualified human capital present in the region. The RITTS Aachen region is extremely well endowed, institutionally 'thick' in terms of higher education institutes (RWTH University, Aachen Polytechnic), large public teaching-training-research organisations (such as KFA *Forschungszentrum Jülich GmbH*, several *Fraunhofer* institutes, etc.), private research laboratories and technological development facilities of multinational companies, and an abundance in both public-funded and commercially-driven technology transfer organisations, incubator centres, and technology business parks.

Table 5.3 positions the old industrial RITTS Aachen region vis-à-vis the region's main innovation system deficiencies based on the Tödtling & Trippl (2005) typology of regional innovation system types as presented in chapter 2.

²⁵ The data originate from the RITTS 038 Stage 1 report (1995).

5.3.3.5 The proposed innovation policy solution

The final policy output of the RITTS Aachen project for which regional consensus could be mobilised within the Steering Committee consisted of eight measures, selected out of twenty

Table 5.3: Pattern matching of regional innovation <i>problématique</i> by regional innovation system type – OLD INDUSTRIAL REGIONS			
	Type of regional innovation system:		
	Old industrial regions suffering from 'lock-in' as a systemic deficiency	DE: Aachen	UK: North East of England
System deficiencies:			
Knowledge application and exploitation sub-system ('knowledge users'): firms and regional clusters			
Cluster characteristics	Often specialised in mature industries	√ YES for Aachen hinterland; x NO for city of Aachen: successful reconversion with high- to medium-tech start-ups and successful FDI	√ YES; overall few clusters
	Large firm dominance	x NO, mostly SMEs, few large enterprises	√ YES, dominance of large, foreign-controlled, assembly branch plants
Innovation activities	Mature technological trajectories, domination of incremental and process innovation	√ YES; cost-cutting strategies dominate	√ YES; price/quality strategies dominate
Knowledge generation and diffusion sub-system ('knowledge creators'): higher education, research organisations, intermediaries			
Universities/research organisations	Often oriented towards traditional industries/technologies	x NO, large RWTH university evolved over time into Germany's leading technical university; nucleus of region's renewal	√ YES; relatively few higher education institutions and research organisations
Education/training	Emphasis often on technical skills; managerial skills and 'modern' qualifications often missing	√ YES	√ YES
Knowledge transfer	Many and specialised transfer organisations but weakly coordinated	√ YES	√ YES
	Often too little orientation towards demand	√ YES	√ YES
Networks within and between the sub-systems			

Network characteristics	Often characterised by technological and/or political lock-ins	√ YES	√ YES
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Based on Tödting & Trippel (2005); Martin & Trippel (2014).

proposed. The feasibility to deliver the measures by the innovation-relevant actors in the RITTS Aachen region [*Machbarkeit der Vorschläge*] was an important criterion in selecting the final eight. These are:

1) Inter-firm collaboration:

- Pilot projects to promote inter-firm collaboration along the business's value chain, possibly resulting in cluster building;
- First pilot to be launched in the paper industry in Kreis Düren.

2) Coaching of SMEs:

- Coaching of SMEs by so-called 'godfather' companies (*Unternehmenspatenschaften*) to improve their innovative capabilities.
- Build up a database of interested 'godfathers' to coach young companies as a first step.

3) Innovation management techniques:

- Setting up of a working group consisting of the project leader's organisation, both Chambers of Commerce (IHK, HWK), innovation agency, RWTH University, Aachen Polytechnic, and research institute KFA Jülich on the introduction of innovation management techniques in both companies and ITT agencies.

4) Collaboration and coordination among ITT organisations:

- Increasing the collaboration among ITT organisations, strengthening the coordination of their activities, and developing common strategic initiatives, which should all result in increased efficiency for these organisations.
- Each ITT agency to visit 10 companies to test modalities to enable increased collaboration and coordination.

5) Even geographical coverage in ITT support:

- Establishing two new technology transfer agencies, one in *Kreis Heinsberg (Technische Entwicklungsgesellschaft Aachen-Heinsberg GmbH (TEG))*, and one in *Kreis Euskirchen (Technik-Agentur Euskirchen (TAE))* to build up knowledge about local companies and help with innovation support and technology transfer.

6) Risk financing:

- Improving risk financing by making better use of existing funds through better interlinkages between sources of funding within the region and those outside the region (at State and Federal level and EU). Agreed to organise event to exchange information.

7) ICT (Information and Communication Technologies):

- Providing ICT technology services for company purposes. Agreed to launch pilot on Information Society under the banner of the *Regional Konferenz*.

8) TPW programme (*Technologieförderprogramm Wirtschaft*):

- Improving the user friendliness of the TPW programme that is the most important source of State-level technology funding for the region. The first step is to draft a letter to the State Ministry of Economic Affairs, Technology, and Transport with suggestions for improvement (*Anforderungspapier*).

The RITTS Steering Committee members had to commit their organisation to six ‘regional innovation strategy statements’ to adhere to in the post-RITTS period. They were asked to acknowledge that “innovation-based competitiveness is the only sustainable approach to deal with the region’s economic problems and, given the changed framework conditions, can increasingly only be achieved through technology policy measures” (RITTS 038 Stage 2 report, 1996). Two further notable statements asked them to commit to “incorporating statistical data in future strategies” developed by their organisation, as well as to produce “a common list of evaluation criteria to monitor future changes in the ITT landscape” (idem).

Table 5.4 positions the proposed policy response in RITTS Aachen vis-à-vis that suggested by the literature as a ‘context-specific’ way of tackling the region’s main innovation system deficiencies (based on Tödting & Trippel (2005) as presented in chapter 2).

Table 5.4: Pattern matching of regional innovation policy responses by regional innovation system type – OLD INDUSTRIAL REGIONS			
	Type of regional innovation system:		
	Old industrial	DE: Aachen	UK: North East of England
Policy dimensions:			
Strategic orientation of regional economy	Renewal of regional economy	Achieve innovation-based competitiveness through technology policy measures	No strategic orientation in proposed RITTS policy solution; 20+ years of FDI strategy as main vehicle for regional conversion is to continue.
Innovation strategy	Innovation in new fields/trajectories		No innovation strategy proposed; no regional debate on what new technological fields/trajectories nor what new markets to go for.
	Product and process innovation for new markets		However, increasing awareness that SME innovation needs are not sufficiently covered by existing public ITT infrastructure.
Firms and regional clusters	Support clusters in new/related industries or technologies	#Launch pilot projects to promote inter-firm collaboration, possibly resulting in cluster building. Agreed to start with launching first pilot in paper industry in <i>Kreis Düren</i>	
	Restructuring of dominant industries		
	Diversification		
	New firm formation; attract cluster-related FDI		

Knowledge providers	Set up research organisations and universities in new relevant fields		#Continued funding of NETS – a network of 35 key regional providers – and four other supporting projects that all address the issue of effective signposting to relevant sources of expertise within HE (Higher Education) institutions.
Education/skills	Build up new skills required (technical colleges, universities)	#Focus on innovation management techniques at companies. Agreed to set up a working group consisting of the project leader's organisation, both Chambers of Commerce (IHK, HWK), innovation agency, RWTH university, polytechnic and research institute KFA Jülich.	
	Attract new skills		
Intermediary TT organisations		<p>Supply-driven:</p> <p>#Increase collaboration and coordination among intermediary TT organisations. Agreed for each TT organisation to visit 10 companies.</p> <p>#Provide ICT technology services for company purposes. Agreed to launch pilot on Information Society under the banner of the <i>Regional Konferenz</i>.</p> <p>#Establish 2 new TT agencies to correct for geographical imbalance and build up knowledge about local companies (in Geilenkirchen, <i>Kreis Heinsberg</i>, and in Euskirchen, <i>Kreis Euskirchen</i>)</p> <p>#Propose to develop monitoring and evaluation system to monitor future changes in ITT provision, coordinated by project leader.</p> <p>Innovation funding:</p> <p>#Improve risk financing through better collaboration among sources of funding within and outside the region. Agreed to organise Fora to exchange info.</p> <p>#Improve the user friendliness of the TPW programme (<i>Technologieförderprogramm</i>)</p>	<p>Supply-driven:</p> <p>#In order to assess SMEs' ITT support needs, each ITT provider will get access to 700 company profiles stored in a database developed under the Competitiveness Project.</p> <p>#Research will be undertaken on the usage and appreciation of the ITT infrastructure by SMEs, which involves a survey among 7,000-8,000 regional firms.</p> <p># North East Knowledge House and HESIN will look into the adoption of TransferRing, a good practice example described in Stage 2 report and aimed at combining different types of support into 'packages'.</p> <p>#the Competitiveness Project attempts to provide business support organisations with a 'self-assessment' methodological tool for business support organisations to assess to what extent they are funding-oriented versus customer-driven.</p>

		<i>Wirtschaft</i>). Agreed to draft a letter to the Landes Ministry with suggestions for improvement (<i>Anforderungspapier</i>)	#Changes to the existing monitoring and evaluation system are up to each individual ITT organisation with a proposed coordination role by the project leader NDC.
Networks	Stimulate networking with respect to new industries and technologies on regional, national, and international levels		
Other		#Coaching of SMEs by 'godfather' companies (<i>Unternehmenspatenschaften</i>) to improve their innovative capabilities. Agreed to build up a database of interested 'godfathers' to coach young companies.	

Based on Tödting & Trippel (2005); Martin & Trippel (2014).

5.3.4 RITTS North East of England

RITTS North East of England is the second old industrial region case of this study.

5.3.4.1 The RITTS region

RITTS North East of England is situated in the north-eastern part of England, bordering in the north the sparsely populated Highlands region of Scotland, to the east the North Sea, to the west with rural Cumbria, and to the south with equally rural Yorkshire, a culturally distinct region and home to the infamous King Richard III (1452-1485).

RITTS North East of England is a region with a population of almost 2.6 million people living on 8,592 km² (293 inhabitants per km²) and is, as such, one of the largest RITTS projects (EUROSTAT 1994 data). The largest town is Newcastle upon Tyne with 1,127,000 inhabitants living in the Metropolitan Area Tyne and Wear (EC, 1993:173), followed by Durham (part of County Durham with 599,000 inhabitants (EC, 1993:169)). Although the region is mostly associated with large industrial conurbations dating back to the 19th century Industrial Revolution, the region stretches all along the North Sea and parts of it are exclusively rural, dominated by agriculture.

5.3.4.2 The RITTS project

RITTS North East of England was among the 19 RITTS proposals selected following the first Call for Proposals in 1994. The proposal was submitted by NDC, the Northern Development Company, which is the regional development agency of the North of England. NDC was established in 1986 to coordinate and develop programmes to trigger employment growth in the North of England mainly by attracting foreign direct investment. In terms of core funding

received from central government, NDC is relatively small compared to the development agencies of Scotland and Wales, or the Tyne and Wear Development Corporation, whose marketing budget alone is bigger than NDC's total budget (Hassink, 1992).

RITTS North East of England officially started in November 1995 (with the signing of the contract) and ended 27 months later in February 1998 (with the submitting of the final report of the RITTS project to the EC).

The borders of the RITTS region coincide with those of the project leader, regional development agency NDC, and with those of the Government's Regional Office for the North East. In the contract with the European Commission, the RITTS region is labelled 'RITTS Northern England', but in this study it will be referred to as 'RITTS North East of England' in line with this functional and administrative border definition.

RITTS North East of England is made up of the counties of Northumberland, Tyne and Wear, Durham, and Teesside. These counties are unitary authorities, and as local governments part of the working area of the Northern Development Company.

5.3.4.3 The RITTS project leader

By virtue of being the countersigning party in the contract with the European Commission services, the Northern Development Company (NDC) is the legal representative of the RITTS North East of England region. NDC is a single-purpose, functional regional government actor in charge of economic development and regional employment. NDC was set up as a partnership between the public and private sectors in the North of England. It receives support from the Central UK Government, Local Government in the North of England, the European Commission, the private sector, and a wide range of statutory and non-statutory agencies in the region. NDC collaborates with the higher education sector, research organisations, and other agencies in the region on a wide variety of joint research and strategic exercises.

5.3.4.4 The region's innovation *problématique*²⁶

The regional innovation system of the RITTS North East of England region shares the innovation *problématique* of an old industrial region. The system's deficiencies – sketched below – relate to the system being 'locked in', notwithstanding the possible presence of other innovation problems as well.

Overall, companies' involvement in R&D is below the UK national average, even though highly innovative, leading-edge technology companies are also present in the region. The dominance of foreign-controlled assembly branch plants in the regional economy seems to explain for low R&D expenditures (RITTS 040 Stage 1 report, 1995). This factor also seems to explain the relatively small number of SMEs compared to other UK regions, the low level of indigenous firm formation, and the lowest self-employment rate in the UK (EUROSTAT 1989 data). Similar to RITTS Aachen, the majority of companies do not see 'technology' and 'innovation' as key factors to remain competitive, unlike 'price' and 'quality'. A further similarity is the fact that collaborative partnerships between firms are rather low and occur mostly as part of a 'client-supplier' relation with the new inward investors.

The region's unemployment rate was well above the UK and EU average at the time of the RITTS project. Many skills present in the region have become outdated due to the economy's regeneration and the supply of new skills has not grown proportionally. The latter

²⁶ RITTS 040 Stage 1 report (1995).

has caused the region to suffer from a lack of skilled labour, which is exacerbated by the low levels of educational attainment in comparison to the UK average.

The region has higher education institutions such as the Universities of Durham and Newcastle upon Tyne, and Polytechnics at Sunderland, Teesside, and Newcastle upon Tyne. However, these are considered too few to produce 'home grown' scientists and engineers needed for R&D functions and managers and accountants for general business functions.

There is widespread agreement among ITT support organisations that many SMEs lack the necessary managerial, marketing, and business development skills in-house to be receptive to ITT support. Enterprises, on the other hand, point out that these organisations do not cater well to their needs. They look for 'packaged', not cut-up, ITT support that is 'tailor-made' for their strategic business needs. Similar to RITTS Highlands and Islands, they would welcome a more permanent, relations-based dialogue with ITT support organisations on all strategic business issues. They also look for in-depth specialist expertise given that they – unlike large companies – do not have the resources to identify, locate, and obtain access to this type of specialist knowledge and are dependent on third parties. However, few ITT support organisations have the resources and the capability to deliver such long-term 'integrated' support packages to SMEs. Besides the fact that the funding mode of these organisations discourages such an approach, they too are faced with the regional shortage in specialist skilled labour, no referral mechanism exists, and few collaborate with other organisations to extend their capacity.

Table 5.3 positions the old industrial RITTS North East of England region vis-à-vis the region's main innovation system deficiencies based on the Tödting & Trippel (2005) typology of regional innovation system types as presented in chapter 2.

5.3.4.5 The proposed innovation policy solution

The final policy output of the RITTS North East of England project consists of six measures labelled as 'priority areas for action'. Different organisational 'homes' are attributed to the six measures, such as Knowledge House, NETS, Business Link, and the Competitiveness Project. The six priority areas for action are:

1) **Providing companies with an 'overall package' of support** that is demand-oriented rather than supply-driven. This is to be achieved through continued funding of NETS – a network of 35 key regional providers – and four other projects including Knowledge House – which are to take care of effective signposting to relevant sources of expertise within Higher Education institutions.

2) **Ensuring a more continuous and comprehensive assessment of SME needs.** This is to be achieved through additional research, as follows:

- each ITT organisation will have access to 700 company profiles stored in a database developed under the Competitiveness Project;
- academic research will be carried out by Newcastle upon Tyne University as part of the Competitiveness Project's business process research;
- research will be undertaken via NETS analysing the perception, uptake, and use of ITT support services by regional companies;
- a survey among 7,000-8,000 regional companies will be undertaken by RTC North.

3) **Improving the monitoring and evaluation system** of ITT support to enable the assessment, not only of outputs of the funded projects or programmes, but also of results for beneficiaries, and impacts on the regional economy. How to do this is left up to the individual ITT organisation. An overall coordination role by the NDC is proposed.

4) **Improving the supply-demand relationship** through a combination of actions undertaken by multiple ITT organisations, including (i) a comprehensive mapping of all ITT organisations and services offered; (ii) adopting a system of categorising firms according to their ITT needs; (iii) combining different types of ITT support into packages; (iv) raising companies' awareness.

5) **Re-examining funding modalities** of ITT organisations. Current government support funding – favouring short-term project funding through competitive bidding over longer-term core funding – makes it difficult to better align the support in accordance with company needs.

6) **Improving the collaboration between public and private service providers** centred on a more customer-driven instead of funding-oriented approach. This is to be achieved by providing ITT organisations with a self-assessment methodological tool.

Table 5.4 positions the proposed policy response in RITTS North East of England vis-à-vis the one suggested by the literature as a 'context-specific' way of tackling the region's main innovation system deficiencies (as presented in Table 2.3 in chapter 2).

5.3.5 RITTS Hamburg

RITTS Hamburg makes up, together with RITTS South Coast Metropole, the two metropolitan region cases of this study. Both RITTS projects represent regions that are large conurbations, densely populated, home to national and international headquarters, and an important contributor to regional economic growth and national GDP. Despite being well-endowed in terms of innovation-relevant actors, the regions' innovation systems are 'fragmented' and lack inter-actor networks and interactive learning modes, while the system itself lacks a single overarching innovation purpose (*ein regionales Leitbild*). These obstacles hindering the region from realising its full innovation potential are, of all innovation obstacles, the most systemic in character.

5.3.5.1 The RITTS region

Hamburg is not only a city, but also a *Land* in its own right, one of the sixteen Federal States of Germany. RITTS Hamburg covers the State of Hamburg and is situated in the north of Germany along the Elbe River, about 120 km inland of the North Sea. The borders of RITTS Hamburg are those of the *Land* Hamburg. State of Hamburg, city of Hamburg and RITTS Hamburg are used interchangeably in this study and cover the same geographical area. The RITTS Hamburg region is a general-purpose government region.

At the time of the RITTS project, the Free and Hanseatic City of Hamburg was home to some 1.7 million inhabitants, and it is the second largest city of the country after Berlin. With 755.3 inhabitants per km², it is also one of the most densely populated regions in Germany. Taking the economic hinterland into account as well, which stretches into the Federal States

of *Niedersachsen* and *Schleswig-Holstein*, the Hamburg metropolitan area has more than 4.5 million inhabitants. This so-called *Metropolregion Hamburg* comprises three Federal States, 14 *Kreise*, and 800 localities, making it one of the economic powerhouses of Germany and Europe.

5.3.5.2 The RITTS project

RITTS Hamburg was among the 19 RITTS proposals selected following the first Call for Proposals in 1994. The proposal was submitted by the State Ministry of Economic Affairs (*Wirtschaftsbehörde der Freien und Hansestadt Hamburg*, or *WIB*), more specifically by the two departments that dealt with technology transfer and economic policy of the region. RITTS Hamburg officially started in December 1994 (with the signing of the contract between the State Ministry and the European Commission) and ended 20 months later in August 1996 (with the submitting of the final report of the RITTS project to the EC).

5.3.5.3 The RITTS project leader

By virtue of being the countersigning party in the contract with the European Commission services, *WIB* (*Wirtschaftsbehörde der Freien und Hansestadt Hamburg*, the State Ministry of Economic Affairs), is the legal representative of the RITTS Hamburg region. Two units within *WIB* are involved in RITTS: the *Abteilung Wirtschaftspolitik* (economic policy) and the *Abteilung Technologie and Kommunikationstechnik* (dealing with technology transfer), which houses the RITTS project management. Of all six RITTS regions in this study, RITTS Hamburg is the region with the highest concentration of political power, bundling local and regional power in the same political territory and covering all three branches of state power: executive, legislative, and judicial.

5.3.5.4 The region's innovation *problématique*²⁷

The regional innovation system of the RITTS Hamburg region shares the innovation *problématique* of a metropolitan region, notwithstanding the possible presence of other innovation problems as well. The system's deficiencies – sketched below – mainly relate to the 'fragmentation' of the system. Despite being institutionally 'thick', all elements operate independently from one another, and the system lacks overall focus and coherence.

At the time of the RITTS project, the city of Hamburg had the highest GDP in Germany and a relatively high employment rate, at 88 per cent of the working-age population employed in over 120,000 companies (RITTS 033 Stage 1 report, 1995). In contrast, firms' investments in research, technological development, and innovation in the Hamburg region are below the national average. This is partly related to the sectoral make-up of the regional economy. The service sector dominates, employing three quarters (75.7%) of the working population, mainly in trade, transport (cargo container shipping), finance, and media-related jobs (radio and television broadcasting, publishing, advertising). The remaining one quarter (23.2%) works in low- to medium-tech industries such as minerals processing, food processing, and shipbuilding, with the high-tech aeronautical industry (Airbus) being the exception.

Despite the presence of a small group of internationally oriented, high-tech enterprises, the regional economy is dominated by SMEs with little R&D and innovation activity. This R&D

²⁷ Data from RITTS 033 Stage 1 Report (1994).

underinvestment hinders the uptake and use of knowledge available in the region's rich knowledge generation sub-system embodied in its four universities and *Fachhochschulen*,²⁸ and important research organisations, *Großforschungseinrichtungen*, such as DESY and GKSS.²⁹ Although more than 20 technology transfer institutions are part of this sub-system, most firms consider it very difficult to locate those services they need and to find relevant, competent technology partners due to the highly fragmented nature of the technology transfer system. Similar to other RITTS regions, companies express a need for more 'packaged' ITT services and a different way of engaging in technology matters (more shared risk participation in R&D projects for example).

Besides being numerous, the TT organisations are very diverse – whether in terms of size, mission, types of services offered, competencies, funding modalities, operating procedures, or legal basis of operation – and they all seem to be in competition with one another over the same small group of clients. The fact that the TT organisations are not familiar with one another, to the point of being distrustful, also translates into very little referral taking place among TT providers, universities, and research institutes in the region. As a result, firms have little trust in the TT organisations, which in turn undermines the TT function within the Hamburg regional innovation system.

Table 5.5 positions the metropolitan RITTS Hamburg region vis-à-vis the region's main innovation system deficiencies based on the Tödting & Trippel (2005) typology of regional innovation system types as presented in chapter 2.

Table 5.5: Pattern matching of regional innovation <i>problématique</i> by regional innovation system type – METROPOLITAN REGIONS			
	Type of regional innovation system:		
	Metropolitan regions suffering from 'fragmentation' as a systemic deficiency	DE: Hamburg	UK: South Coast Metropole
System deficiencies:			
Knowledge application and exploitation sub-system ('knowledge users'): firms and regional clusters			
Cluster characteristics	Many industries/services, but high profile and knowledge-based clusters often missing	x NO, few industries/services dominate regional economy (trade, transport, finance, media/publishing/advertising alongside minerals processing, food	x NO, few industries/services dominate regional economy (trade, transport, marine, aerospace, defence-related industries, and tourism sector (retail,

²⁸ *Universität Hamburg, Universität der Bundeswehr Hamburg, Technische Universität Hamburg-Harburg, and Fachhochschule*

²⁹ DESY and GKSS are both members of the Helmholtz Association of German Research Centres, Germany's largest scientific organisation. DESY, *Deutsches Elektronen-Synchrotron*, is a public-funded research centre performing basic research, developing, running, and using accelerators and detectors for photon science and particle physics. It is one of the world's leading centres for the investigation of the structure of matter. *GKSS-Forschungszentrum Geesthacht GmbH* deals with coastal research (such as studying future storm surges and analysing the eyes of hurricanes) and materials research (developing welding methods and testing lightweight materials and advanced engineering materials).

		processing, shipbuilding, and the aeronautical industry) √ YES, knowledge-based clusters are missing	distribution, hotels, restaurants)) √ YES, knowledge-based clusters are missing
Innovation activities	R&D in headquarters of large firms and in high-tech companies; product innovation and new firm formation often below expectations	x NO, overall little R&D undertaken √ YES, below expectations	x NO, overall little R&D undertaken √ YES, below expectations
Knowledge generation and diffusion sub-system ('knowledge creators'): higher education, research organisations, intermediaries			
Universities/research organisations	Many and high-quality, but often weak industry links	√ YES	√ YES
Education/training	Large variety of schools and other educational organisations	√ YES	√ YES
Knowledge transfer	In general, a high density of such services, mostly commercialised	√ YES, high density x NO, mostly public-funded	√ YES, high density x NO, mostly public-funded
Networks within and between the sub-systems			
Network characteristics	Market links dominate, often few cluster- and innovation-related networking	√ YES	√ YES

Based on Tödting & Tripl (2005); Martin & Tripl (2014).

5.3.5.5 The proposed innovation policy solution

The final policy output of the RITTS Hamburg project consists of two broad measures considered key in shaping the new technology transfer concept for the Hamburg region. In Stage 2, regional consensus was achieved on the two key drivers of such a new technology transfer concept. The new ITT system would have to (i) establish *more efficient use* of increasingly scarce public funds by changing the funding modalities of the public-funded TT organisations; and (ii) spend the available public money *more effectively* by changing the TT set-up into a more inter-linked, coordinated, and cooperative system. The final output of the RITTS Hamburg project translated these two key drivers as follows:

In order to establish more efficient use of increasingly scarce public funds, the State Ministry of Economic Affairs – and RITTS project leader – introduced a change in funding modalities for three TT organisations. The gradual annual reduction in core funding took effect immediately. As of budgetary year 1996, these organisations would receive a fixed amount of core funding from the Ministry per year with an annual reduction after 1996 towards a maximum costs coverage of 50%. The remainder of the costs would have to be matched by market-generated income.

In order to spend the available public money more effectively, the Hamburg government decided to create and fund a single, central coordinating body of all TT organisations called

Technologiestiftung Hamburg, the Hamburg Technology Foundation.³⁰ This new organisation was endowed with an initial capital of 100 million DM (equivalent of approximately 50 million euros, 1996 exchange rate) considered sufficiently large to give the Foundation the necessary room to manoeuvre to achieve its objectives and to ensure independence from the fluctuations affecting the regional government's annual budget. The different objectives the Foundation was to serve were shaped in a significant way by the findings of the RITTS project. These will not be detailed further in this section, but the most important ones are referenced in Table 5.6.

Table 5.6 positions the proposed policy response in RITTS Hamburg vis-à-vis the one suggested by the literature as a 'context-specific' way of tackling the region's main innovation system deficiencies (based on Tödtling & Trippl (2005) as presented in chapter 2).

Table 5.6: Pattern matching of regional innovation policy responses by regional innovation system type – METROPOLITAN REGIONS			
	Type of regional innovation system:		
	Metropolitan	DE: Hamburg	UK: South Coast Metropole
Policy dimensions:			
Strategic orientation of regional economy	Improve position of regional economy in global knowledge economy	Secure Hamburg's position for the future as an attractive place to do business and undertake research	
Innovation strategy	Science-based and radical innovation, new ventures		
	Enhance interaction between industry and knowledge providers	<i>#Technologiestiftung Hamburg</i> to create networks between Hamburg knowledge providers (academia and research institutions) and Hamburg firms	<i>#Regional Innovation Network</i> to facilitate a more effective interface between SCM firms, knowledge providers (academia and research institutions), and ITT organisations
		Reduce fragmentation of ITT support and put in place a performant ITT system within framework conditions of shrinking public funding	Create better networking and visibility of existing ITT schemes and fill the gaps by launching new initiatives
Firms and regional clusters	Support emerging clusters related to region's knowledge base	<i>#Technologiestiftung Hamburg</i> to initiate regional debate on the strengths and weaknesses of individual economic sectors and analyse the innovation potential	<i>#Sector Focus Programme</i> is a coordinated sectoral approach to develop SCM marine sector into a European marine pool of excellence

³⁰ The political decision to create the Hamburg Technology Foundation was taken by the Senate on 16 April 1996, and the proposal was endorsed by Parliament on 8 May 1996. The RITTS project finished in August 1996.

	Develop specialisation advantages to achieve synergies and international visibility		<i>#Technology Development Unit</i> to help firms develop higher value products
	Attract cluster-related FDI		
	Support start-ups and spin-offs in knowledge-based industries		<i>#Technology Development Unit</i> to help existing companies grow and help set up new technology companies
Knowledge providers	Expand and set up high-quality universities and research organisations in relevant fields	<i>#Technologiestiftung Hamburg</i> to market the knowledge potential of Hamburg knowledge providers (academia and research institutions)	<i>#Technology Development Unit</i> to commercialise academic research at Business Links through spin-offs, spin-outs, licensing, etc.
Education/skills	Set up universities/schools for highly specialised qualifications and skills required		
Intermediary TT organisations		<p><i>#Change</i> in funding of 3 ITT intermediaries (reduced regional government funding, larger-share external matching)</p> <p><i>#Ministry</i> to set up thematic working groups with other ITT organisations to favour a more project-based funding (and less government funding)</p> <p><i>#Ministry</i> created a new ITT coordination body: <i>Technologiestiftung Hamburg</i> and assigned a 50 million euro budget</p> <p><i>#Technologiestiftung Hamburg</i> to interlink and coordinate existing ITT organisations and instruments, incl. via public tendering</p>	<p><i>#Innovation Datanet</i> to provide improved access to regional data with various measures, such as producing a ‘Michelin’ quality guide on innovation support based on survey among 500-600 firms and ITT organisations in each SCM sub-region</p> <p><i>#Technology Development Unit</i> at Business Links, unit is staffed with 5 technology business managers and will alleviate resource constraints at Business Links</p>
Networks	Promote regional networks among firms, encourage local research–industry interfaces	<i>#Technologiestiftung Hamburg</i> to create networks between Hamburg knowledge providers (academia and research institutions) and Hamburg firms	<i>#Regional Innovation Network</i> to facilitate a more effective interface between SCM firms, knowledge providers (academia and research institutions) and ITT organisations
Other		<i>#Technologiestiftung Hamburg</i> to increase innovation awareness among	<i>#Regional Technology Funding</i> to provide firms with risk financing for

		SMEs and provide firms with innovation support	technology undertakings in early stage of project development; proposed funding for RTF of £1,000,000 (equals ±50 firms that can be supported, average project support of £20,000)
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Based on Tödting & Trippel (2005); Martin & Trippel (2014).

5.3.6 RITTS South Coast Metropole

RITTS South Coast Metropole is the second metropolitan region of this study.

5.3.6.1 The RITTS region

RITTS South Coast Metropole covers the area of the so-called ‘South Coast Metropole’, a loose union of five local authorities on England’s South coast, established in 1993. The purpose of the South Coast Metropole partnership is to represent the region’s common economic interests, position the region in a wider national and international context, and exploit opportunities for development (Bobe & Shurmer-Smith, 2007).

The two largest cities are Southampton (215,000 inhabitants) and Portsmouth (189,000 inhabitants), both port cities with a naval history dating back centuries. The South Coast Metropolitan area adds up to over 1.1 million inhabitants, divided over Poole (141,500 inhabitants), Bournemouth (161,500 inhabitants), Southampton, Portsmouth, and the Isle of Wight (125,000 inhabitants) (RITTS 032 Stage 1 report, 1996).

Due to its location at sea, the region is a nationally important centre for port activities, a central transport node – for rail, road, air, and sea travel – and an important cargo hub for cross-channel traffic to France, the Channel Islands, and Spain. Its oil and petrochemical industries provide 20 per cent of the nation’s refinery capacity (Bobe & Shurmer-Smith, 2007). Due to the mild climate conditions and the region’s beautiful wildlife and preservation areas, the region is also an important tourist destination and a well-known UK retirement destination.

5.3.6.2 The RITTS project

RITTS South Coast Metropole was among the first batch of 19 RITTS proposals selected following the 1994 Call for Proposals. The proposal was submitted by Poole Borough Council.

The RITTS project officially started in December 1994 (with the signing of the contract) and ended 31 months later in July 1997 (with the submitting of the final report of the RITTS project to the EC).

The borders of the RITTS South Coast Metropole are those of the five local authorities: the boroughs of Poole, Bournemouth, Southampton, Portsmouth and Isle of Wight. At the start of RITTS, the Isle of Wight was not part of the South Coast Metropole, but joined in September 1996, thereby “strengthening the efforts to establish a firm identity for the central south coast region” (RITTS 032 Final report, 1997:3).

5.3.6.3 The RITTS project leader

Poole Borough Council is the countersigning party in the contract with the European Commission services and hence the legal representative of RITTS South Coast Metropole. The South Coast Metropole partnership was established just one year prior to the start of RITTS. At the start of RITTS, the Isle of Wight was not part of the South Coast Metropole, but joined in September 1996, and was hence part of the RITTS project for the remaining 11 months.

5.3.6.4 The region's innovation *problématique*³¹

The regional innovation system of the RITTS South Coast Metropole region shares the innovation *problématique* of a metropolitan region, notwithstanding the possible presence of other innovation problems as well. The system's deficiencies – sketched below – mainly relate to the 'fragmentation' of the system, lacking inter-linkages in both geographical and economic terms.

As in RITTS Hamburg, three-quarters of all regional employment is in the service sector (public administration, education, health; banking, finance, insurance, business services; wholesale, retail, hotels, catering), where tourism takes up the largest share within the service sector (on average, over 20%). Employment in the manufacturing sector is smaller, but still significant for the local economy, with transport and cargo activities being important for the whole of the South Coast Metropole region. Different parts of the region feature different manufacturing sectors: naval shipbuilding and defence-related activities in Portsmouth; oil and petrochemical industries in Southampton; textile; food & consumables; and wood, timber, and rubber on the Isle of Wight. Overall, there is little R&D and innovation due to the dominance of tourism and transport, although pockets of high-tech activities exist (aerospace). On the positive side, those types of companies that could benefit from increased R&D and innovation to move into higher value business areas also seem to be aware of this (RITTS 032 Stage 1 report, 1996). They regard innovation as a key source of competitive advantage and the main avenue to add business value.

Unfortunately, according to the companies surveyed, three innovation-critical factors are difficult to secure in the region. These are access to funding (for both capital investments and market development), access to skilled staff (in particular in engineering, metallurgy, optical chemicals, and software), and control of intellectual property rights. The extensive technology transfer and innovation support infrastructure could in theory help. In practice, however, too often they provide companies with 'off-the-shelf' solutions without deeper knowledge and understanding of the specificities of the firm, the sector, and the prevailing market conditions. Not unlike other regions investigated in this study, firms express a need for 'intelligent access' to information and data sources and a need for more technical consultants, as well as more general management support (to better organise the innovation function in-house) and more information exchange with other firm managers. Whereas the Hamburg firms suffer from fierce, territorial competition among ITT organisations resulting in little or no referrals, the South Coast Metropole firms rather suffer from the opposite: 'excessive referrals to one another', yet still without a solution to their problem in the end (RITTS 032 Final report, 1997).

The team of experts pointed out that establishing better technology transfer in the region should help SMEs to find an answer to their innovation-related questions in 90% of the

³¹ Data in this section are taken from the RITTS 032 Stage 1 report.

cases. They base this on the fact that South Coast Metropole – as with Hamburg – is an institutionally ‘thick’ region with its three universities (Southampton, Portsmouth, and Bournemouth), of which two are former polytechnics with a long-standing tradition of industry links, its Colleges of Technology and Further Colleges of Education, its three centres of excellence in materials research, mechanical engineering, and oceanography, and its DERA research groups (linked to the defence sector).³²

Table 5.5 positions the metropolitan RITTS South Coast Metropole region vis-à-vis the region’s main innovation system deficiencies based on the Tödtling & Trippl (2005) typology of regional innovation system types as presented in chapter 2.

5.3.6.5 The proposed innovation policy solution

The final policy output of the RITTS South Coast Metropole project consists of five measures labelled as ‘five key programmes’. During the panel meetings in Stage 2, the invited companies had mentioned several major constraints to innovation, which formed the basis for the actions proposed. The five key programmes for which regional consensus was found in the Steering Committee are:

1) Regional Innovation Network:

The region lacks an effective interface between ITT organisations, academia, and industry. The Regional Innovation Network is to become the new referral system for enterprises encompassing all people in charge of technology transfer, innovation support, and industry liaison within the region’s main R&D organisations, universities, and technology centres. The Business Links’ signposting activities – currently understaffed and under-budgeted – are to be integrated into the Regional Innovation Network. Those organisations whose staff would have successfully absolved from additional training in innovation consultancy and SME client management would receive a seal of quality as ‘South Coast Metropole Innovation Advisor’. Receiving this seal would allow them to benefit from access to additional regional funding, PR exposure for their organisation, and an opportunity to enlarge their client base.

2) Innovation Datanet:

Similar to other RITTS regions, collecting regional data in Stage 1 had been an onerous task in the RITTS South Coast Metropole project, because ‘regional data are either unavailable, too expensive, or out of date and irrelevant’ (RITTS 032 Final report, 1997:43). The Innovation Datanet is to provide Internet access to the latest regional data of relevance to enterprises. The data will originate from different sources: partly from Supernet, a national database on UK technology and research expertise (also mentioned by the companies in RITTS Highlands and Islands), partly from the UK-wide Business Link Innovation Data Base, and partly from new data collection conducted by the South Coast Metropole region itself. The Innovation Datanet is also to provide a members-only innovation forum for information exchange, problem sharing/solving, Q&A sessions, virtual workshops, and conferences between companies and technology providers.

³² The Hampshire Innovation and Research Directory identified 73 organisations as potential sources of research and technical services in the South Coast Metropole region (not including the Isle of Wight).

3) Technology Development Unit:

Moving up the value chain requires resources that enterprises, SMEs in particular, do not necessarily possess. The Technology Development Unit is a team of five technology business managers tasked with assisting companies in their product development and product commercialisation. It is to be set up as a not-for-profit company limited by guarantee. The Technology Development Unit is assumed to play a key role in helping:

- firms located in the South Coast Metropole region develop higher-value products;
- existing firms grow and create new technology firms;
- provide the Business Links with additional resources (in the form of specialised technological know-how) to alleviate their resource constraints while simultaneously enhancing their support on offer;
- commercialise academic research through spin-offs, spin-outs, licensing, and the like.

4) Regional Technology Funding:

The Regional Technology Funding programme is to address the innovation funding needs of companies through the provision of risk financing. It will fund specific actions in the early stage of project development, such as technology assessment, prototype development, market survey, technology acquisition, and expert assistance. Funding is to be provided as a contribution to the costs of specific actions in the form of an interest-free loan – but repayable only if successful – matched by company resources where feasible. The team of experts propose funding the programme with one million pound sterling, to be spent over a period of three years, with the intent of upholding the ‘incentive’ character of the funding scheme. This amount would enable assistance to 50 companies in total – that is, between 12-15 companies on an annual basis – at an average of 20,000 pound sterling per action supported.

5) Sector Focus Programme:

The Sector Focus Programme is a cluster strategy inspired by the examples of Rennes, in the Brittany region of France (telecommunications – technology-driven cluster), and Prato, North Italy (textile – industry-driven cluster). It sets out to strengthen the competitive position of the region’s marine companies in international markets and develop this sector as a European ‘marine pole of excellence’. Pro-active and coordinated government action is needed to encompass ‘industrial capacities, technology skills, services, and appropriate financing in order to help firms to successfully overcome the challenges they face’ (RITTS 032 Final report, 1997:57). A first step is to create a South Coast Metropole Marine Forum to coordinate all existing support schemes of use to marine firms; to create a South Coast Marine ‘brand’ that will position the region nationally and internationally and help attract external investment; and to facilitate all kinds of marine-relevant collaborations (among firms, between firms and R&D centres, between R&D centres and universities).

Table 5.6 positions the proposed policy response in RITTS South Coast Metropole vis-à-vis the one suggested by the literature as a ‘context-specific’ way of tackling the region’s main innovation system deficiencies (based on Tödtling & Tripll (2005) as presented in chapter 2).

5.4 Conclusions drawn from pattern matching

The purpose of this chapter has been to establish whether the proposition of contextualised policy-making in the area of innovation holds. In section 5.3, the study’s six region cases were

described according to the Tödting & Trippel (2005) framework presented in chapter 2. Based on the specification of a theoretical pattern, pattern matching has been applied by comparing the observed pattern in each of the six cases in this study with the theoretical predicted pattern. The results of this pattern matching have been summarised in section 5.3 in Tables 5.1, 5.3, and 5.5 for the definition of the regional innovation *problématique* and in Tables 5.2, 5.4, and 5.6 for the regional innovation policy response. Two conclusions stand out and are presented in this section 5.4.

The first conclusion is that, concerning the diagnosis of the region's innovation *problématique*, all regions display an accurate definition of what is wrong with their regional innovation system at the end of Stage 1. Moreover, the problem definition is very close in all six cases, and in some cases identical to what theory predicts for that particular system-type, despite the different research teams employed and the wide variety of research methods used to collect and analyse the data. Put differently, the empirically observed problem definition matches the theoretical one. In each of the six region cases, regional actors diagnosed the systemic failures of their regional innovation system accurately and in line with what theory predicts for that particular system-type.

The second conclusion is that, concerning the regional innovation policy response, similar problem definitions seemed to generate a wide variety of policy proposals that do not seem to follow as logically and automatically from the problem definition as theory predicts. In all six region cases the final policy mix of measures coincides only partly, if at all, with what theory predicts as 'context-specific' solutions to innovation system failures in those particular system types (that is, policy measures aiming at tackling 'organisational thinness', 'lock-in', and 'fragmentation'). Put differently, there is a mismatch between the empirically observed policy response and the theoretically predicted one. Having a region-specific problem definition does not necessarily translate into a regional innovation policy as contextualised as theory predicts. Apparently, something happens in between establishing the problem definition at the beginning of the policy process and agreeing on the final policy decision at the end of it. Understanding what happens requires opening up the policy process itself. Opening up the black box of policy-making to better understand *how* the decisions came about in each of the six regions culminating in that particular policy decision is tackled in the next chapter 6.

5.5 Summary

This chapter is the first of two empirical chapters and deals with the description of the six case studies being RITTS projects. The chapter started, therefore, with a description of the European RITTS programme in terms of its purpose, funding, regional coverage, and design set-up for the reader to understand what a RITTS project is supposed to do and deliver. A RITTS project is divided up in sequentially linked activities that take place in three separate stages reflecting a rational, monocentric view of the policy process. Adhering to this RITTS format was mandatory for all RITTS programme participants.

Next, the six case studies were introduced and described in terms of the dominant regional innovation *problématique* found in Stage 1 of the RITTS project, and the policy response agreed upon by the regional stakeholders at the end of the RITTS project, in Stage 3.

Based on the specification of a theoretical pattern described in chapter 2, pattern matching was applied by comparing the observed pattern in each of the six cases with the theoretical predicted pattern. The purpose of pattern matching was to establish whether the

proposition of contextualised policy-making in Regional Innovation Systems theory holds, that is whether regions with a similar innovation *problématique* design similar regional innovation policies. The results of this pattern matching were presented in table format, in Tables 5.1-5.6.

At the end of chapter 5, two main conclusions were drawn from pattern matching. Concerning the diagnosis of the region's innovation *problématique*, all regions displayed an accurate problem definition that was in line with what theory predicts for that particular regional innovation system type.

However, similar regions (in terms of regional innovation system type) displayed a wide variety of policy responses. The second conclusion, therefore, is that a 'context-specific' problem definition need not result in a regional innovation policy as 'context-specific' as assumed in Regional Innovation Systems theory. Something happens 'in between' that generates cross-regional policy variation.

Understanding what it is that happened requires opening up the policy design process to analyse how decisions were made in each of the six RITTS projects culminating in that particular policy choice. This will be done in the next chapter, the second empirical chapter. The fifteen indicators presented in chapter 4 will serve to structure the multiple-case analysis. The analysis is to reveal what roles regional government took on in the policy-making process to develop their 'context-specific' regional innovation policy.