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Designing 'Context-Specific' Regional Innovation Policy:
A Study on the Role of Regional Government in Six European Regions

Fabienne Corvers

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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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Acknowledgements

It was Václav Havel[1] who said: "Hope is not the conviction that it will turn out well, but the certainty that undertaking it makes sense regardless of how it turns out." Over the years that I worked on this thesis I have often been asked why I was doing this. After all, I had left my research institute to follow a different career path. "Why do you need this then?" was a common question asked. Rational arguments were given, but the real reason is because undertaking it made sense to me, and it did so with absolute certainty. The research question I asked myself is as relevant today as it was back then. The fact that undertaking it turned out well in the end – with a finished doctoral dissertation – I consider a bonus. This book reports on my research for you to read and offers the unique opportunity to thank all those whose patience has been tested, yet whose support in all its variations made this undertaking possible and worthwhile.

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[1] Václav Havel (1936-2011) was a writer and dissident under Czechoslovakia's Communist regime. Following the regime's collapse he served as the country's last President (1989-1992) and then, following the split of the country as the first President of the Czech Republic (1993-2003).

as his unit was nicknamed given the many PhD degree-holders in his team including himself, in particular: Henri Delanghe, Jim Dratwa, Vincent Duchêne, Andrea Erdei, Carmen Marcus, Viola Peter, Brian Sloan and Agnieszka Stasiakowska.

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1

Introduction

"Nothing has such power to broaden the mind as the ability to investigate systematically and truly all that comes under thy observation in life"

Marcus Aurelius (121-180), Roman emperor

1.1 Research context

European regional policy and the underlying policy ideas have undergone a change from its early neo-classical beginnings in the mid-1970s emphasising supply-side, infrastructure-oriented measures to generate economic growth in Europe's less favoured regions to the 'smart specialisation' mantra of the mid-2010s focussing on context-specific, innovation-led regional economic development of those regions.

Smart specialisation *as an idea* refers to "a virtuous process of diversification through the local concentration of resources and competences in a certain number of new domains that represent possible paths for transformation of productive structures" in the region (Foray, 2014). Smart specialisation *as a policy* refers to the role of government, regional government in particular, as a facilitator to ensure that this process of innovation-driven diversification takes place in collaboration with the region's key innovation stakeholders and to construct 'place-based' competitive advantages for the region in the global economy.

Whereas smart specialisation as an idea has been attributed to Dominique Foray[1] and the members of the EU Knowledge for Growth Expert Group[2] vice-chaired by him in 2008-2009, the constituent elements of smart specialisation as a policy can be traced back to two EU pilot programmes in the mid-1990s: RTP/RIS and RITTS.[3] These constituent elements were and still are:

- The policy is about *innovation-driven* economic transformation as opposed to transformation via infrastructure provision, foreign direct investments, or other supply-side measures where 'innovation' encompasses all forms of innovation, be it R&D-based or non-technological.
- The policy is about *endogenous* development, starting from what the region has to offer in terms of 'strengths, competitive advantages and potential for excellence' (RIS3 factsheet, 2014) as opposed to copying successes from elsewhere.
- The policy has to be developed collectively together with the region's major innovation *stakeholders* as opposed to a top-down, 'picking-winners' type of government intervention or public-funded short-term stimulus packages (Landabaso, 2014).
- The policy choices made are *informed choices* based on factual evidence and include sound monitoring and evaluation systems to track the progress and achievements of the policy enabling learning and corrective measures.

1.2 Problem description

The implications of this change in policy ideas for the design and implementation of policy, as well as for the evaluation of policy in terms of 'successful' versus 'unsuccessful', are wide-ranging. A number of ex-post evaluations have demonstrated that designing a policy that is truly *innovation-driven, contextual, collective,* and *informed* puts high demands on the institutional capacities of regional government (Charles et al., 2000). Several academic

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[1] The concept of 'smart specialisation' was developed by Foray et al. (2009) and has been subsequently elaborated by Paul David, Bronwyn Hall, Phil McCann, and others (Landabaso, 2014).
[2] http://ec.europa.eu/invest-in-research/monitoring/knowledge_en.htm
[3] Regional Technology Plan/Regional Innovation Strategy (managed by the European Commission, DG REGIO in charge of European regional policy; participation was open to EU regions with a GDP below 75% of EU average) and Regional Innovation and Technology Transfer Strategies and Infrastructures (managed by the European Commission, DG ENTR in charge of European technology policy; participation was open to all EU regions).

scholars have pointed out that the success of these research and innovation strategies for smart specialisation ('RIS3', as they are referred to in EU Cohesion Policy jargon) is "even more dependent on the quality of the local institutional framework" than previous intervention types (Rodriguez-Pose et al., 2014:9). "It [RIS3] assigns an important role in the policy-making process to regional actors and puts them at the very heart of the strategy design and implementation process" (Rodriguez-Pose et al., 2014:9).

And yet, despite this change in policy ideas increasingly guiding EU regional redevelopment since the mid-1990s (as said, towards a public intervention that is *innovation-driven, contextual, collective,* and *informed*), the underlying assumptions about regional government as a policy actor and the way in which this actor arrives at policy decisions have remained unchanged. Policy practitioners continue to view the policy process in an instrumental-economic way, in which policy choices are assumed to be guided by problems and the success of a policy is assessed by its effectiveness, its goal attainment. Involving stakeholders and collecting data on the region's obstacles to innovation is assumed to deliver a problem definition from which the policy solution emerges quasi-automatically.

This is problematic for at least three reasons. Based on personal experience managing RTP/RIS and RITTS projects in the second half of the 1990s on behalf of the European Commission, I witnessed a very different behaviour on the part of regional government institutions, far less rational and 'automatic' than assumed. And what the region perceived as 'successful' policy seemed to revolve as much around other dimensions as around goal attainment. In other words, there was and still is a mismatch between theory (*'Soll'*) and practice (*'Ist'*) that cannot be left unexamined. There is a need to investigate to what extent and how regional government matters for the design of 'context-specific' regional innovation policy in real life.

Opening the black box of policy design could help explain this mismatch, yet this is still an unexplored area of academic research. The instrumental-economic vision underpinning RIS3 research and innovation strategies for smart specialisation and the RTP/RIS and RITTS predecessor pilot programmes takes inspiration from the Regional Innovation Systems literature. One of the key assumptions in this literature is that regional government can and will deliver differentiated, 'customised' innovation policies that take the region's specific economic characteristics into account addressing its specific innovation obstacles (Isaksen, 2001; Nauwelaers & Wintjes, 2003; Tödtling & Trippl, 2005). Consequently, this literature views knowledge of the region's dominant innovation *problématique*[4] as the central input to arrive at 'context-specific' regional innovation policies as opposed to 'one-size-fits-all' policies. Designing and implementing policies is, however, not a neutral, scientific, conflict-free activity. In order to understand why proposed policy solutions can be vastly different between seemingly similar regions, one has to open up the black box of the policy process and analyse the way in which regional government arrives at policy decisions. Institutions govern innovation processes and provide incentives for the interaction between regional actors (Rodriguez-Pose et al., 2014). Public Administration is very well positioned as a scientific discipline to shed light on the variables that matter in the design of policies. As a scientific discipline, it is equipped to conceptualise the role of regional government and open up the black box of policy design for analysis.

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[4] Regional innovation *problématique* is the term I will use in this study to indicate a collection of interrelated innovation problems in the region's innovation system and is interchangeably used with the terms 'systemic failures' and 'system deficiencies'.

Thirdly, the assumptions about regional government as a policy actor – in terms of behaviour – have remained unchanged despite the fact that smart specialisation puts new demands on regional government institutions and holds regional government performance to high expectations. The policy recommendations found in the Regional Innovation Systems literature are very much based on the 'logic of applied problem-solving' (Howlett and Ramesh, 2003). In reality, however, it cannot be assumed that organisations see problem-solving as their main concern. And even if they do, actors cannot be assumed to behave (fully) rationally; at best they display 'bounded' rationality. Policy-making is a polycentric process involving many actors and each of these actors represent different institutions, in charge of different missions, endowed with different resources. As Sorensen & Torfing (2007:3-4) put it: "(…) *policy*, defined as the attempt to achieve a desired outcome, is a result of *governing processes* that are no longer fully controlled by government, but subject to negotiations between a wide range of public, semi-public and private actors (…)". Policy choices are negotiated solutions for which consensus could be achieved among a multitude of autonomous, yet interdependent actors (Marcussen & Torfing, 2007). Policy is the result of interaction. Policy-making can resemble more 'muddling through' than problem-solving and if the latter should be the main orientation then 'where one stands depends on where one sits'; in other words: solutions are always politically and institutionally embedded. So, the rational actor assumptions that underpin the view on government in the Regional Innovation Systems concept are problematic. One will not be able to determine policy 'success' (or 'failure' for that matter) and learn what type of intervention actually makes a difference for the region. The assumptions about human behaviour are simply too theoretical.

That is why in this study I propose a Public Administration framework of analysis that is more encompassing than the instrumental-economic vision of the Regional Innovation Systems literature. The study will be a heuristic guide to help better understand what a 'context-specific' regional innovation policy is and how regional government matters in its design. And it will help investigate to what extent all regional governments can design this type of policy or whether some regional governments are better equipped in terms of policy planning and programming powers to do so than others.

The theoretical relevance of my research resides in the idea that adding a Public Administration viewpoint will complement and enrich the Regional Innovation Systems body of knowledge. This is significant, because it contributes to narrowing the current knowledge gap – as indicated above – and makes it easier to understand how regional actors, regional governments in particular, are behaving (and making decisions) the way they are.

The policy significance of my research resides in the fact that with a better understanding of the variety of roles regional government can perform, these actors are empowered with increased understanding of their room of manoeuvre in the area of innovation policy and the impact their actions can generate. And by being better informed they can perform better and design innovation policies that make a difference to the region's innovation performance.

1.3 Scope of the study

This study is not about developing the concept of regional innovation systems into new levels of theoretical or empirical sophistication. I refer to the many excellent studies undertaken with this purpose in mind while acknowledging that there are still methodological pitfalls to

be sorted out and important questions to be addressed that are currently left unanswered (Edquist, 1997; Braczyk et al., 1998; Cooke & Morgan, 1998; Doloreux & Parto, 2004; Fagerberg et al., 2005; Cooke et al., 2011; Asheim et al., 2011). On the other hand, the progress made on Regional Innovation Systems as a concept in recent years has helped to clarify why some policy actions make more sense than others in view of the region's dominant innovation *problématique* – without mistaking 'policy implications' for 'policy recipes' (Fromhold-Eisebith, 2007; Lagendijk, 2011; McCann & Ortega-Argiles, 2013a; Martin & Trippl, 2014; Foray, 2016).

In the past, innovation research focused all too often on "core regions exemplifying successful innovation systems (…) such as Silicon Valley, Route 128, Emilia-Romagna and Baden-Württemberg" (Doloreux, 2003). However, as Doloreux rightfully comments, "lessons learned from these regions are seldom applicable elsewhere" (Doloreux, 2003). In this study, any region that comprises a regional production structure and a regional support infrastructure is thought of as a regional innovation system, irrespective of the system's performance (Cooke, 2001). Strengthening the latter is, in this study, seen as the rationale for and subject matter of regional innovation policy. The value of the Regional Innovation System concept lies in its capacity to serve as an analytical and diagnostic tool to uncover system deficiencies. The term regional innovation '*problématique*' used in this study refers to particular system deficiencies linked to a particular regional innovation system. It is this particular quality that has been most appreciated by policy practitioners as it helps them to better structure the 'daily chaos' they face and give direction in finding policy answers.

This study is also not about justifying government intervention in the area of research and innovation. The underlying assumption of this study is that there is a meaningful role to be played by regional government, but this role is more complex and multi-layered than is depicted in the Regional Innovation Systems literature. This study aims to contribute to better understanding what this role is, how its success (or failure) can be assessed, and whether all region types can engage in this role, based on behavioural assumptions about government as an actor in a regional innovation system that are more realistic than the rational actor approach.

1.4 Theoretical approach

By making 'smart specialisation' strategies conditional for receiving financial support in the area of research and innovation under the 2014-2020 EU Cohesion policy, the political ambition of this RIS3 generation of regional innovation policy is unprecedented. This also provides a good opportunity to go back in time to the early beginnings of smart specialisation and take a closer look at the regional experiences with the pilot programmes in the second half of the 1990s. In retrospect, how did these pilot programmes benefit the regions that participated? How 'contextualised' were the regional innovation policies that emerged from the RITTS projects?

The design of the RITTS programme in the mid-1990s took inspiration from the 'regional innovation systems' (RIS) concept by describing the region in terms of a dichotomy between supply of and demand for knowledge with public policies aiming to bridge the gap between the two. The regional innovation system concept assumes that regional government matters for the performance of the regional innovation system due to its 'policy capacity', that is, its ability to define the regional innovation *problématique*, decide on policy choices, and then act upon those choices (Painter & Pierre, 2005). Scholars of the regional innovation system school,

however, warn against the illusion of one-size-fits-all policies (including copying policy successes from elsewhere) and call instead for differentiated innovation policies that take the region's specific economic characteristics into account together with the specific innovation obstacles it needs to address (Isaksen, 2001; Nauwelaers & Wintjes, 2003; Tödtling & Trippl, 2005). Literature on regional innovation systems considers this, a regional differentiation of innovation policy, important in order to arrive at effective policies as innovation support needs of regional industries and firms tend to be different under different regional economic conditions (Hassink, 2002).

Having regions themselves taking charge of the policy design is considered the best guarantee to arrive at 'context-specific' innovation policies, given their intrinsic knowledge about their own region, including "its bottlenecks, vested interests and power games" (EC, 2001:59). As Stahlecker & Koschatzky (2010:1) put it, "a fundamental part of the place-based approach is that it allows responses to be tailored to local conditions, rather than imposed uniformly top-down". The European Commission shared this belief when it launched the regional innovation programmes RITTS and RTP/RIS in the 1990s. As European regions are very differently endowed in terms of political power and financial resources, the regional innovation system literature concludes that some regional governments are better equipped than others to design 'context-specific' regional innovation policies (Asheim & Isaksen, 2003).

Based on conceptual work identifying region types according to their main innovation characteristics, the focus of Regional Innovation Systems research has been on *what* type of 'context-specific' regional innovation policy is appropriate to effectively address the innovation problems at hand. Contextualised policy-making in the area of innovation is expected to be similar for regions sharing a similar innovation *problématique*. But what if this is not the case? What if cross-regional variation among seemingly similar regions is more often found than not?

Establishing *what* type of regional innovation policy makes more sense in view of the region's dominant innovation *problématique*, as valuable as that knowledge is in itself, does not say anything about *how* this policy will come about. This study focuses on this latter question, as little is known about the policy design process and the specific role of regional government in this process. By combining Regional Innovation Systems literature with Public Administration insights, this study sets out to contribute to a fuller understanding of how 'context-specific' regional innovation policies come about, and what the role(s) of regional government is(are) in the policy-making process. This study also undertakes preliminary explorations of the question as to whether the presence of formal competencies enabling 'authoritative decision-making' (Schakel, 2009) at the regional level matter for the contextualisation of regional innovation policy.

In line with Public Administration theory, in particular the typology used by Toonen et al. (1998) and applied in multiple Dutch 'governmental governance capacity' studies *('bestuurskracht onderzoek')* since its publication, this study distinguishes between four different functions of regional government (Korsten et al., 2007; Abma, 2012). All four functions are relevant for the performance of a regional innovation system.

The first function of regional government as an expression of 'community' can be regarded as the most classical interpretation of the purpose of local and regional government (Toonen et al., 1998). Regional government is the institutionalised expression of regional identity, of the region perceived as 'community'. Regional government is an instrument to

represent this regional community and establish (as well as fight for) the 'regional interest' with regard to innovation. The regional innovation system is viewed as a community of people; their involvement matters to regional government and innovation is viewed as serving the region's interest.

The second function of regional government is that of being a manager of resources 'to deliver public goods and services'. The characteristics of public goods and services are such that neither individuals acting independently nor markets coordinating demand and supply will be able to deliver these public goods. Knowledge, a key ingredient of innovation, has such public good characteristics. In this second function, regional government's main task is to help the regional innovation system to 'develop, diffuse and utilise innovations' (Carlsson & Stankiwiecz, 1995) by providing innovation support policies and services, including the implementation of legislation – national and/or European – affecting innovation.

The third function of regional government is that of being a 'political-administrative entity' for a given territory, in its own right and in its relation to other tiers of government. 'Region' is seen in terms of territorial demarcation of power. The territorial distribution of power across government tiers defines the extent to which regional government is 'enabled' to be attentive to contextual conditions. Regional Innovation System scholars mostly refer to this conceptualisation of regional government. Regional government is part of a larger, multi-layered system of innovation connecting the region to other sectoral, national, and global innovation systems (Koschatzky, 2000). Regional government is to ensure the 'connection' of the region to these systems, allowing the region to tap into new knowledge sources and to learn from good practices elsewhere.

A fourth and final function of regional government centres around its ability to deal with change. Change can be interpreted as a 'crisis' in which government becomes an institution of 'last resort', the only organisation 'still standing' managing the crisis, ensuring business continuity. With regard to innovation, managing change can involve using innovation as a way to respond to disruption, but it can also be seen as a planned, intentional process with regional government bringing about structural changes in the economy. This change makes old technologies and old ways of working redundant and that requires their replacement with new alternatives, new institutions, new processes, and new futures (Hassink, 2000). This is the role that the 'smart specialisation' mantra of European regional policy has in mind.

How well regional government succeeds in performing these functions will be assessed in accordance with four 'quality levels of governmental governance' (Toonen et al., 1998; Toonen & Staatsen, 2004; Toonen, 2015). Policy assessments in the regional innovation system literature tend to stay at the first-order level of governance, the so-called operational level. Regional government is seen to tackle the right problems in a competent and cost-effective manner. The success or failure of regional government is assessed in terms of its 'responsiveness' to the regional innovation problems at hand and its efficiency in using (scarce) resources to achieve innovation policy goals.

Public Administration literature points out that regional government can also be assessed at higher-order levels of quality, the so-called procedural, constitutional, and increasingly the contextual level (Toonen, 2015). The procedural level is about 'legitimacy' in the way in which regional government operates. Regional government is trusted and has authority based on the use of transparent procedures, the involvement of innovation-relevant stakeholders, equal treatment of equal cases, and the extent to which it delivers on its promises.

The constitutional level is about 'resilience'. Regional government creates the conditions for a robust, adaptable, sustainable regional innovation system capable of handling change; continuous learning and renewal are programmed in. The political choices made and the way in which regional government has acted upon these choices have induced confidence in regional government. Regional government is seen as able to handle crises effectively and has established itself as an institution of 'last resort'.

The contextual level is about 'congruence'. Regional government contextualises its actions in place and time and through this congruence its actions resonate. Regional government adapts contemporary solutions to the specificities (the 'uniqueness') of the region as expressed through its physical, geological, and climatological characteristics and its linguistic, historical, and cultural identity.

Public administration scholars point out that a policy that did not manage to achieve its objectives is not necessarily a policy failure, and vice versa. Transparency of procedures, involvement of stakeholders, learning from the past, installing mechanisms for change to name a few, are also important values and are sometimes more beneficial to the functioning of a regional innovation system than building another science park or funding another innovation support scheme.

The four functions of regional government and the four quality levels at which the execution of these functions can be assessed are applied to regional innovation policy. The resulting 4x4 Public Administration matrix defines sixteen possible roles of regional government in the design of a 'context-specific' regional innovation policy.

1.5 Research method

In order to answer the study's research question, the policy process in six European regions will be investigated employing a descriptive, multiple-case study research method (Yin, 2003). Each case deals with a European region that has participated in the EU programme RITTS during the second half of the 1990s. RITTS aimed at enhancing the quality of the regional innovation and technology transfer support infrastructures and policies towards satisfying the innovation needs of regional firms, SMEs (small and medium-sized enterprises) in particular. RITTS, together with its sister programme RTP/RIS, are the predecessors of the smart specialisation strategy underpinning current European regional policy. With each RITTS project having to formulate a 'context-specific' regional innovation strategy through a three-staged, standardised process, the EU hoped to improve the policy capacities of regional governments and innovation-relevant actors. The latter – stronger policy capacities – was considered beneficial for arriving at stronger regional capacities for research and innovation.

Apart from practical criteria dealing with language and archive accessibility, two key methodological criteria have been applied to make a case selection out of the 70+ RITTS projects that participated in the programme and received EU funding in the period between 1994 and 2000. Firstly, they had to cover regions that could be defined as distinct regional innovation system types which due to their socio-economic characteristics face very different innovation problems. Secondly, the case studies had to cover regions belonging to different government systems where the degree of regional autonomy to design and deliver a 'customised' regional innovation policy varies considerably.

The final choice of the six RITTS regions represents three distinct regional innovation systems in line with the typology presented by Isaksen (2001), Nauwelaers & Wintjes (2003), and Tödtling & Trippl (2005). The regions representing these three types of regional

innovation systems – peripheral, old industrial, and metropolitan – belong to two countries that are often presented as opposites on the regional autonomy continuum, namely Germany (federal government system) and the United Kingdom (unitary government system).

The concept of a regional innovation system and the three system types distinguished in this study serve to assess to what extent the regional innovation policies designed in the six RITTS region cases represent a 'contextualised' policy response to the region's dominant innovation *problématique*. The three-staged policy process of a RITTS project serves as the study's empirical site. The 4x4 Public Administration matrix with its sixteen government function/governance level combinations serves as the analytical framework for the case studies to answer the research question of this study. For the investigation of the empirical phenomenon of contextualised policy-making in the area of innovation, multiple sources of evidence and multiple types of data were used. Qualitative data were gathered from an existing dataset through archival records research and documentation analysis, as well as personal observations managing RITTS and RTP/RIS projects in the second half of the 1990s on behalf of the European Commission.

1.6 Research question

The research question of this study is: *to what extent and if so, how does regional government matter for the design of 'context-specific' regional innovation policy?*

In order to answer the research question the following steps towards operationalisation are taken. The architecture of a RITTS project is similar to a 'policy cycle', a 'decision process' divided up in multiple stages (Lasswell, 1956). The policy-making process takes place in sequentially linked activities that materialise in separate stages. In a RITTS project, Stage 1 deals with agenda setting and problem definition: recognising the problem as being of public concern and in need of government intervention, and defining the problem ('positioning'). Besides gathering and analysing data to define the problem definition, for some RITTS projects the activities in Stage 1 also included policy formulation, that is, preparing different options to address the problem. Others combined policy formulation with policy decision-making in Stage 2, which would entail discussing the various options with regional stakeholders and obtaining regional consensus on the preferred policy response. Other RITTS projects preferred to use Stage 2 exclusively for regional discussion and consensus finding on the various options and postpone making a decision on the preferred option to Stage 3. Stage 3 would then combine this with activities to prepare the implementation modalities and outline the monitoring and evaluation system to monitor the implementation's progress. The implementation of the agreed policy and the monitoring and evaluation of its realisation is for all RITTS projects 'post-RITTS', outside the scope of the RITTS programme as it was set up by the European Commission. These aspects are also outside the scope of the investigation undertaken in this study where the focus is on the activities undertaken *during* the RITTS project.

In order to establish what role(s) regional government plays in the policy process aimed at designing a contextualised policy, data are collected on 'who' decides 'what', 'when', 'how', and, if possible, 'why' during the three stages of a RITTS project. The policy process is perceived as a 'policy discussion' about decisions to be taken by regional government to formulate the region's innovation policy. Throughout the policy process, this discussion can take place at one or multiple governmental governance levels and can vary per Stage. The data analysis is guided by fifteen indicators covering all four governance levels. It is not the

formal competencies bestowed upon regional government, but the real-life 'policy discussion' in each of the six RITTS cases in this study that forms the basis from which the key role(s) of regional government are deduced. The Public Administration matrix offers sixteen possible roles. Opening up the black box of policy-making and shedding light on the type of 'policy discussion' that took place is considered useful for establishing the type of role(s) regional government played in shaping that discussion. Tracing the decision process of 'context-specific' regional innovation policy is the approach taken in this study to reveal *how* regional government in the six European regions of this study matters for the design of 'context-specific' regional innovation policy.

The findings of the case studies on regional government roles will then be further explored in relation to i) region type (in terms of innovation *problématique* distinguishing between peripheral, old industrial, and metropolitan regional innovation systems); ii) regional government's formal administrative position in the nation-state (federal vs unitary government system, as an indication of the extent of regional autonomy); and iii) type of regional government organisation in charge of the policy design process (general-purpose, territorial vs single-purpose, functional organisation) in order to detect any correspondence or patterns between particular government roles and particular characteristics of the region.

1.7 Structure of the study

The organisation of the study is as follows: after the introductory chapter 1, chapters 2 and 3 present the theoretical framework, chapter 4 outlines the research design, chapter 5 describes the case studies, chapter 6 analyses the case studies, chapter 7 presents the results and conclusions, and chapter 8 closes with an outlook. The organisation is detailed below.

After this introductory chapter, chapter 2 is the first of two theoretical chapters. The RITTS programme took inspiration from the 'regional innovation systems' concept that in turn was inspired by the 'national innovation systems' concept. Chapter 2 looks into the literature on Regional Innovation Systems to define both concepts, to help diagnose the region's innovation system deficiencies, and to help specify what policies are considered appropriate in view of this innovation *problématique*. Chapter 2 ends with a typology that will serve as the theoretical benchmark to determine to what extent the empirical reality in the six regions confirms what Regional Innovation Systems theory predicts, undertaken in chapter 5.

Chapter 3 is the other theoretical chapter in which regional government as a policy-making actor and its roles in policy design will be defined according to the Public Administration literature. The chapter will describe the functions of regional government and the governance levels at which the performance of these functions can be assessed. By bringing together the four functions of regional government with the four levels of governmental governance in a 4x4 matrix, a Public Administration framework of analysis is constructed. This framework expresses sixteen theoretical role possibilities for regional government in policy design and will serve as an analytical heuristic tool to empirically capture the roles regional government takes on in the six regions.

Chapter 4 is the chapter explaining the study's research design. In this chapter, the research method and the data gathering techniques are described, and the study's conceptual model is presented. In order to translate the study's theoretical research question into an empirically observable one for which data can be collected, fifteen indicators are constructed to analyse the policy design process in each of the six case studies.

Chapter 5 is the first of two empirical chapters. The chapter starts with a description of the European RITTS programme followed by a description of the six RITTS projects selected as case studies. Pattern matching is undertaken to determine to what extent the observed pattern – in terms of the definition of the regional innovation *problématique* established in Stage 1 of the RITTS project, and the policy response agreed upon at the end of the RITTS project in Stage 3 – matches the theoretical predicted pattern presented in chapter 2. The purpose of pattern matching is 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.

Pattern matching reveals the mismatch between the empirically observed policy response and the theoretically predicted one. Regions facing similar innovation problems need not come up with similar policy solutions. Understanding why this is the case requires opening up the policy process to analyse how decisions were taken in each of the six regions. This is the purpose of chapter 6, the other empirical chapter. The analysis is to reveal the real-life roles regional government takes on and acts upon in the policy-making process to succeed at developing a 'context-specific' regional innovation policy. The fifteen indicators presented in chapter 4 will serve to structure the multiple-case analysis.

Chapter 7 will present the research findings of the study and answer the research question. In addition, a search for patterns will be undertaken searching for three types of correspondence with the regional government roles found. Chapter 7 will explore, firstly, to what extent particular roles are found to correlate with a particular regional innovation *problématique*. Secondly, it will explore to what extent particular roles correlate with a particular government system type (federal vs unitary). And thirdly, to what extent particular regional government roles correspond with a particular type of regional government organisation in charge of policy design (general-purpose, territorial vs single-purpose, functional). The chapter ends with drawing the conclusions from this study as well as dedicating a few words on the study's limitations and relevance.

Chapter 8, finally, presents an outlook putting the study's findings in a wider perspective of academic research agendas, in particular governance research, and strategic policy needs, in particular the EU's 'smart specialisation' agenda.

2

Defining 'context-specific' regional innovation policy

"Vor der Wirkung glaubt man an andere Ursachen als nach der Wirkung"

Friedrich Nietzsche (1844-1900), German philosopher

2.1 Introducing 'context-specific' regional innovation policy

Definitions of what constitutes a 'context-specific' regional innovation policy vary in the literature (Hassink, 1992; Metcalfe, 1995; Cooke & Morgan, 1998; Morgan & Nauwelaers, 1999; Koschatzky, 2000; Isaksen, 2003; Tödtling & Trippl, 2005; McCann & Ortega-Argiles, 2013b; 2015) and different synonyms have been used for *'context-specific'*, such as *'customised'* (Soete & Arundel, 1993), *'tailored'* (Asheim & Isaksen, 1997), *'differentiated'* (Tödtling & Trippl, 2005), *'bespoke'* (Howells, 2005), and *'place-based'* (Landabaso, 2014). The following aspects, however, seem to be shared by all definitions. 'Context-specific' regional innovation policy:
   ➢   concerns a course of purposive action;
   ➢   which is undertaken by public policy organisations;
   ➢   in order to strengthen companies' ability to innovate;
   ➢   through measures that address regional innovation system deficiencies;
   ➢   and where innovation is seen as an interactive learning process that converts 'knowledge and ideas' into 'something commercially successful'.

Literature on regional innovation systems emphasises the importance of this policy to be context-specific as opposed to implementing a 'one-size-fits-all' policy. The latter is considered to take no regard of 'the specific strengths and weaknesses of regions in terms of their industries, knowledge institutions, innovation potential and problems' (Tödtling & Trippl, 2005; Martin & Trippl, 2014).

Literature on regional innovation systems considers a regional differentiation of innovation policy important in order to arrive at effective policies. This is because regional economic conditions differ, rendering the innovation support needs of regional industries and firms different (Hassink, 2002).

Literature on regional innovation systems assumes that designing 'context-specific' regional innovation policy follows from properly diagnosing the region's innovation problems and offers an analytical framework to do so. This is the subject of the first theoretical chapter, chapter 2.

Literature on regional innovation systems also assumes that regional government matters for designing 'context-specific' regional innovation policies; decentralisation and devolution of power to regional tiers of government is seen as a contributing factor (Hassink, 2002). Regional government matters, firstly, because it possesses 'unrivalled local knowledge' (Morgan & Nauwelaers, 1999) on both the innovation problems and the relevant actors. Because of its context-specific knowledge, its resources and its competencies as general-purpose government, regional government is assumed best placed to define the proper regional innovation *problématique*, decide on appropriate policy choices and then act upon these choices.

It matters, secondly, because only regional government – compared to other regional organisations such as regional development agencies, chambers of commerce, etc. – has the "political legitimacy or the moral authority of a politically elected regional government" (Morgan & Nauwelaers, 1999) to orchestrate conversations between innovation-relevant actors. Because of its institutional position in the region, regional government is assumed to be able "to help others to help themselves by animating communities of meaning, by building

capacities for action and by crafting networks through which agents are able to collaborate for mutually beneficial ends" (Morgan & Nauwelaers, 1999).

What roles regional government can play according to the literature and how 'success' in designing a 'context-specific' regional innovation policy can be assessed is the subject of the second theoretical chapter, chapter 3.

As has been said above, this chapter looks into the literature on regional innovation systems to set up an analytical heuristic framework that helps to diagnose the region's innovation problems, and that helps to specify what policies are considered appropriate in view of the innovation problems that need to be solved. This framework will then be applied to the six case studies and serve as a theoretical benchmark to determine whether regional government diagnosed the region's innovation problems accurately and whether the proposed regional innovation policy followed logically from the diagnosis.

Chapter 2 is organised as follows. Section 2.1 defines what a 'context-specific' regional innovation policy is. Section 2.2 explains when and why this policy emerged in Europe. Section 2.3 describes the analytical dimensions of the regional innovation systems concept, first in general, followed by a description of three types of regional innovation systems according to their dominant innovation *problématique* in section 2.4. Section 2.5 presents the theoretically appropriate policy response for each of the three ideal-typical innovation problems. Section 2.6 concludes chapter 2 with a short summary.

2.2 The emergence of 'context-specific' regional innovation policy in Europe[5]

When did 'context-specific' regional innovation policy emerge? In the early 1990s, 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: RITTS (Regional Innovation and Technology Transfer Strategies and Infrastructures) and RTP/RIS (Regional Technology Plan/Regional Innovation Strategy). Economically advanced as well as less-favoured regions in Europe were invited to submit a proposal to develop such a policy.

The European Commission was pioneering a new approach centred on innovation, bringing together two important Community policy objectives: making Europe's enterprises, SMEs in particular, more competitive, while simultaneously enhancing the economic prosperity of Europe's less-favoured regions. This led some authors to suggest that regional innovation policy is in fact a merger, the result of a gradual convergence of two previously distinct policy areas, namely technology and regional policy, which have both undergone a change in policy ideas (Hassink, 1992; Corvers & Nijkamp, 2000; Lagendijk, 2011).

These two programmes did not materialise out of thin air. Before going into the specifics of RITTS in chapter 5, it is important to understand what developments led up to their emergence, as 'context-specific' regional innovation policy differs in important respects from its predecessors. Two developments in particular contributed to the emergence of regional innovation policy in Europe: a rapidly changing policy environment in the 1980s that triggered a search for policy responses different from the past and the emergence of changing ideas about sources of economic growth. The latter not only positioned 'knowledge' as a fourth production factor, next to land, labour, and capital (Kluge et al., 2001, quoted in Vissers & Dankbaar, 2013), but also viewed the process of generating, applying, and diffusing knowledge as far less linear than so far assumed.

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[5] Parts of section 2.2 were previously published in Corvers (2005).

2.2.1 European economic integration and changing policy ideas

The first development that influenced the change in underlying policy theory (Hoogerwerf, 1987) was the ongoing economic integration process of the European Community. The preparation, signing, and subsequent ratification of the European Single Market initiative was a major, if not the main policy event of the 1980s and carried important ramifications for Europe's future competitiveness. The European Single Market initiative had set in motion a process of 'getting prepared' for this new reality that caused policy thinking on sources of economic growth and competitiveness within the European Commission to shift. As the European Single Market – the next step in Europe's economic integration process – would abolish the remaining non-tariff trade barriers among the then 12 Member States, national industries would be exposed to European-wide competition (Corvers, 1994). The soon-to-be reality of the internal market promoted greater concern for the competitiveness and productivity of Europe's firms. Their capacity for research, technological development, and innovation (RTDI) was considered crucial for facing increased competition, yet 'in the Commission's opinion, Europe's research and industrial base suffers from a series of weaknesses' (EC, 1993:86).

The weaknesses identified in the 1993 White Paper on Growth, Competitiveness, Employment included unduly low levels of RTD investment (compared to its main competitors US and Japan) and a lack of coordination at various RTD levels and between various RTD actors. However, "the greatest weakness of Europe's research base is" according to the White Paper unmistakably "its comparatively limited capacity to convert scientific breakthroughs and technological achievements into industrial and commercial successes" (EC, 1993:87). Similar weaknesses were identified in the 1995 Green Paper on Innovation where the failure (in comparison with its main competitors) of Europe to translate scientific and technological advances into marketable innovations and competitive advantages despite its strong scientific performance was labelled the 'European paradox' (EC, 1995).

Having positioned 'innovation' as the single most important factor for raising economic productivity and achieving competitiveness, the White Paper emphasised the need to define a global innovation strategy bringing together the public authorities, research bodies and the various sectors of society concerned, while the Green Paper stressed the importance of the regional level in the formulation and implementation of such a collectively shared strategy (EC, 1993; EC, 1995). These aspects, government designing an innovation strategy in partnership with innovation-relevant actors and acknowledging the importance of the regional policy level in doing so, would become cornerstones of the RITTS and RTP/RIS pilot programmes.

2.2.1.1 European regional policy

This novel framework of the Single Market becoming a reality on January 1st, 1993 triggered new policy ideas in European regional policy. The European Community's regional policy increasingly emphasised the importance of supporting the restructuring of regional production systems in order to make regions more competitive. RTD and more generally, the capacity to innovate and upgrade, particularly in products and processes, started to be considered vital components of regional competitiveness (EC, 1994).

Set out to reduce regional economic disparities across the European Community's territory, European regional policy was perceived as a redistributive policy at heart in which

Member States can claim funds on the basis of regional 'underperformance' (evidenced by statistics on unemployment, GDP, etc.). As such, it "continually faces the risk of being seen as a compensation package for failure rather than investing in success" (OECD 2009:97). By introducing 'innovation' and 'competitiveness' into the political debate, the focus on Europe's less favoured regions as regions with 'problems' shifted towards regions with 'potential'. According to the OECD, "regional innovation policy provided a means to resolve this tension, and to recast policy measures as investing in the potential of less successful places by boosting their innovative capacity" (OECD, 2009:97-98).

Less favoured regions (LFRs) share common characteristics causing their innovation performance to be weak (Landabaso & Reid, 1999).[6] A pilot programme for innovative actions called RTP (Regional Technology Plan), funded under Article 10 of the European Regional Development Fund and predecessor of RIS (Regional Innovation Strategy), was launched in 1993/1994 to test the viability of a more innovation-led regional development approach among LFRs.

2.2.1.2 European technology policy

The Single Market initiative also triggered new policy ideas in European technology policy. The Community's technology policy was increasingly concerned with the weak innovation capabilities of Europe's small and medium-sized enterprises (SMEs). While large corporations had been very much the object of European technology policy in the 1980s, by the mid-1990s the importance of SMEs as the backbone of Europe's industrial fabric[7] was becoming increasingly acknowledged (EC, 1995). According to the Green Paper on Innovation (EC, 1995:17), 99.8% of Community firms had fewer than 250 employees (and 91% fewer than 20) and their level of performance was seen as contributing significantly to Europe's economic and social well-being.[8]

Simultaneously, these types of firms were not well served with the traditional 'market failure' driven science and technology policy instruments that dominated government intervention at both European and Member State level. As these instruments tend to equate innovation with research and development (R&D), they consequently focus on remedying under-investments in R&D and non-appropriability of knowledge spillovers.

However, innovation underperformance in SMEs is often caused by non-R&D-related weaknesses: financial, commercial, managerial, organisational, human resources, etc. (Cannell & Dankbaar, 1996; Landabaso, 1997). These firms are also increasingly linked up to the global economy, yet due to their size they do not possess all resources in-house necessary to be able to compete globally. These firms come to rely on their immediate business environment to gain access to the know-how and information needed. Particularly the regional level fulfils an important role, as this is according to the European Commission "the level closest and most natural to firms" (EC, 1995).

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[6] Landabaso & Reid (1999:26) mention several weaknesses common to LFRs, such as a public sector dominated science and technology system, low levels of innovation in the private sector, little cooperation between RTDI actors, lack of intermediary TT organisations, low absorptive capacity in firms, and weak or non-existent links to international networks.

[7] To quote some of the statistics presented in the Green Paper on Innovation (EC, 1995:17): SMEs account for 66% of jobs and 65% of turnover in the European Union; enterprises with fewer than 100 employees account for virtually all new jobs, at a net rate of 259,000 per year.

[8] Usage of the term 'economic well-being' refers to generating economic growth, reinforcing Europe's competitiveness; usage of the term 'social well-being' refers to creating jobs, reducing unemployment.

There was a role to play for a new type of technology policy, more in tune with the innovation needs of Europe's small and medium-sized enterprises, and more spatially aware, that would help these firms in understanding how to 'utilize the experience and knowledge of other firms, research organizations, the government sector agencies etc.' (Asheim & Isaksen 2003:40). Inspired by the STRIDE initiative of DG REGIO (the regional policy Directorate-General of the European Commission), DG ENTR, the Commission's technology policy department, launched the RITTS programme. This programme was funded out of the Innovation Programme of the Fourth Framework Programme for Research (FP4).

2.2.2 Changing conceptualisation of sources of economic growth

Alongside changes in policy ideas highlighted above, conceptual ideas in academic circles about the relationship between technological change and economic growth had also been changing in the 1980s.

   The model of technological change as progressing from one stage to the next in a linear fashion, starting with R&D-based invention, to innovation and successful market introduction to widespread diffusion in society was being questioned. The new evolutionary school of economic thought considered the innovation process as far more complex, made up of interactive linkages through which knowledge is exchanged between different actors operating in different stages of the innovation process (Kline & Rosenberg, 1986). Closer internal and external linkages in the innovation process connect the various departments within the firm (R&D, marketing, design, accounting, etc.) and link the firm to its wider constituency of 'knowledge sources' (customers, suppliers, competitors, universities, research institutes, training centres, certifying organisations, etc.). It is through these interactions that knowledge is created, diffused, applied, tested, and adapted; the innovation process entails important feedback loops (Kline & Rosenberg, 1986). It is through these 'networks of communication' that firms can create significant competitive benefits, such as shorter development times for innovations, increase in the number and quality of innovations, reduction in costs and financial risks, increase in technological opportunities, improved transfer of tacit knowledge, better user-producer relationships (Soete & Arundel, 1993:33).

   A series of ground-breaking empirical country case studies in the 1980s and early 1990s (Freeman, 1987; Nelson, 1993) evidenced that different levels of R&D investments can only partly explain cross-country differences in innovative performance. Evolutionary growth theory saw "long-term economic growth as the result of the co-evolution of technologies, firm and industry structures, and supporting and governing institutions (…) and that the driving dynamics involves their interaction" (Nelson, 2007:8–9). The case studies showed that innovation processes are institutionally shaped by both market and non-market institutions, where 'institutions' are both formal organisations (the actors) and the rules that shape the behaviour of those actors (laws, but also norms, values) (Edquist, 1997). As Freeman pointed out, "the network of institutions in the public and private sector whose activities and interactions initiate, import, modify and diffuse new technologies" (Freeman, 1987:1) differ per country. It is through these different set-ups of institutions, and with particular processes of networking between them, that different kinds of capabilities will develop in advancing technological development and its commercialisation (Freeman, 1987).

   Based on the seminal work done by each of its three 'founding fathers' – Freeman, Lundvall, and Nelson (Soete et al., 2009) – the concept of 'national systems of innovation' emerged (Edquist, 1997). Innovation came to be seen as an interactive, institutionally shaped

process that takes place within a 'system'. A 'system of innovation' consists of 'elements and relationships which interact in the production, diffusion and use of new, and economically useful, knowledge' (Lundvall, 1992:2), and it is through this interaction that capabilities are developed that determine the performance of the system as a whole.

The systems view of innovation carried important implications for government intervention. Given the fact that knowledge has public good characteristics, such as non-excludability and non-rivalry combined with other characteristics, such as risk, uncertainty and path dependency, market failures are likely to occur (Wolfson, 1988). Neo-classical economists argue that the existence of knowledge spillovers and the likely under-investment by firms in innovative activities as a consequence provide a case for government intervention. Policy measures to remedy market failures focus on the protection of knowledge through (proprietary) patent policies, the creation of knowledge through tax reductions and subsidies for R&D, the enlargement of the knowledge base through funding public R&D, universities, and research institutes, as well as improving general framework conditions for innovation.

Although evolutionary economists do not disagree on the public good characteristics of knowledge, they point out that not all knowledge is codifiable and easily transferable, but might be tacit, requiring a great deal of learning instead (Lundvall & Borras, 1999). Innovation processes are institutionally structured and socially embedded processes. 'Systemic failures' can arise in the institutional composition of the system's elements and in the quality of the linkages between those elements, hence justifying government intervention. Remedying systemic failures opens up a whole new set of policy instruments different from the market failure rationale.

2.2.3 From national to regional systems of innovation

The idea that innovation processes take place within a 'system of innovation' resonated well with regional scholars. Beginning of the 1990s, the 'regional system of innovation' emerged as a new concept (Cooke, 1992; Cooke, 1998; Morgan & Nauwelaers, 1999). As had been the case for the 'national systems of innovation' concept (Soete et al., 2009), this concept also brought together different, yet complementary notions connecting technological change with regional development (Braczyk et al., 1998).

The first notion is linked to the scholarly interest in the relationship between proximity and innovation and the view on innovation as a 'localized and a locally embedded, not placeless, process' (Doloreux & Parto, 2004:4). Knowledge (unlike information) does not travel well, rendering learning processes among innovation-relevant actors territorially connected processes. Learning processes are socially embedded, and thus no 'economic sphere' can be strictly isolated from the 'social sphere' (Lundvall & Borras, 1999:53).

The second notion is linked to the fact that interregional differences in innovation performance are persistent and outdo national differences indicating the presence of powerful structural factors at play at the regional level (Keating, 1998). The case studies of successful regions that were conducted during the first half of the 1990s served as a point in case, bringing to the fore "the role of local specific capabilities in shaping the rate and direction of innovation processes" (Uyarra & Flanagan, 2009:2). Among the case studies were American regions such as Silicon Valley (Saxenian, 1996) and the Greater Boston Area (Feldman & Martin, 2004), as well as European regions such as Baden-Württemberg, Lombardia, Rhône-

Alpes, and Catalonia researched in the EC-funded 'Archipelago Europe: Islands of Innovation' study by Ulrich Hilpert et al. (1992).

And thirdly, with increasing economic globalisation came a new appreciation of regions (as opposed to countries) as the appropriate level to shape a key source of competitiveness in a constantly globalising world, innovation. Those regions that could foster the ability to acquire, adapt, and advance knowledge were seen as "determin[ing] how well businesses innovate and, in turn, how well they compete locally and globally" (Holbrook & Salazar, 2003). Porter (1990) was among those influential authors who "assumed that globalisation, and international specialisation have their roots in the strengthening of specialised technological districts and regional networks" (Lundvall, 1992:3).

Since its launch, and seemingly overnight, the regional innovation system concept became very popular in policy circles, catering as it did to the needs of what policymakers, regional ones in particular, were looking for. The RTP/RIS and RITTS pilot programmes were among the first public policy programmes to take inspiration from the regional innovation systems concept, although it would go too far to claim that it was this concept that brought these programmes into existence (Rutten et al., 2003).

The regional innovation systems concept combines a number of qualities that explain its rapid policy uptake; the following three qualities are among them. Firstly, the RIS concept acknowledges the regional level as an important level of economic coordination (Asheim & Isaksen, 2003) "at which innovation is produced through regional networks of innovators, local clusters, and the cross-fertilizing effects of research institutions" (Lundvall & Borras, 1999:39). This new positioning of the region as a decisive actor in innovation governance was (and still is) music to the ears of regional policy-makers who often feel 'sandwiched' between national policies and local democracy. The regional innovation systems concept feeds the idea that regions are not merely administrative or geo-political areas, but 'spatial mappings of socio-economic force fields' (Corvers & Nijkamp, 2000) able to marry 'knowledge capital, financial capital and social capital' (Leadbeater, 2000:145) through purposive actions.

Secondly, the RIS concept attributes low innovation performance to factors whose remedy is within reach of regional policy-makers. In this evolutionary view, the problem with innovation is not necessarily sub-optimal investments in knowledge production (R&D), which is more the concern of national science and technology policies. What is needed to enhance the innovation capabilities of firms relates to the demand for knowledge, its application and exploitation in novel ways, the interaction between supply and demand, incorporating all sources of knowledge, and not just formal, scientific knowledge. The policy focus is on local firms and local institutions, and not exclusively on "firms at the forefront of technology, or (…) institutions doing the most advanced scientific research" (Nelson & Rosenberg, 1993).

Thirdly, as a concept, it provides an analytical tool to make the "specific systemic context in which (…) government intervenes" understood (Lundvall & Borras, 1999:17). It can serve as a diagnostic tool to detect bottlenecks which impede the operation of the innovation system as a whole. The concept appeals as a normative yardstick on the basis of which policy 'prescriptions' can be based; and vice versa, it offers the possibility ex-post to learn from 'successful' as well as 'failed' policy prescriptions. The concept also allows for comparisons with other systems of innovation and might help in understanding how these work the way they do.

2.3 The analytical dimensions of the Regional Innovation Systems (RIS) concept

One of the big controversies and academic debates has been the translation of the theoretical construct of RIS into an empirically observable phenomenon. In other words, do regional innovation systems exist in real life and if so, which regions can be characterised as a RIS? According to some scholars, only three regions are genuine 'regional innovation systems': Silicon Valley (U.S.), Emilia-Romagna (Italy), and Baden-Württemberg (Germany) (Cooke & Morgan, 1998; Cooke, 2001). Others have argued that all regions have a 'regional innovation system' as long as there is an economic 'production structure' embedded in a supportive 'institutional structure' in which firms and other organisations systematically engage in interactive learning (Asheim & Isaksen, 1997). This study adopts this second view, and the two key dimensions of innovation activity that are constitutive in a regional system of innovation are its 'governance infrastructure and the business superstructure' (Cooke, 1998:19).

If innovation processes do not take place in isolation, but within a 'knowledge system', can a national or regional system of innovation be created? Can it be the 'object of administrative design' (Hood, 1991)? Some authors, such as Carlsson, argue that an innovation system is the objective of technology policy to design/redesign: "the proper role for government policy is to help mould the system as a whole and its 'connectivity', not to rectify individual market failures or support individual projects" (Carlsson, 1995:15). Others such as Nelson and Rosenberg (1993) argue that a national or regional system of innovation is not purposively designed, but has been shaped by the country's history of industrialisation, the nation's laws, the existence of a common language and a shared culture, the national science, education and training system, the style of politics, the mix of public policies and programmes at the micro-, meso-, and macro-level, the competitiveness and export orientation of firms, and so forth. It is beyond the objectives of this study to argue whether a RIS can be created by purposive government action. In this study, the performance of a regional innovation system is seen to be determined by the capabilities that are developed through the interaction of the various institutional elements. As such, public policy organisations in general and regional government in particular are seen as important actors to diagnose and address bottlenecks in this interaction, and hence improve the functioning of the region's innovation system.

The regional scale refers to a scale below the national country level scale. While regional innovation systems have been seen by some as a sub-set of a national system of innovation (Archibugi & Michie, 1997; Wiig, 1999), others have underlined that at the sub-national scale different regional scales can be distinguished at which regional innovation systems exist (Asheim & Isaksen, 1997; Cooke, 2001). As innovation systems are open systems, this study acknowledges that "a specific firm may be part of several innovation systems, be they sectoral, local or national, at the same time" (Isaksen, 2003:51). This study nevertheless focuses on the regional innovation system that is located within a national territory, but is sui generis and not a mini-version of the national innovation system.

Finally, it is useful to distinguish between national and regional innovation systems in three respects. Firstly, routines and practices and the shared beliefs and value system of the regional innovation system are importantly shaped by its respective national system of innovation in which firms face "country-specific institutional, infrastructural and cultural conditions regarding relationships among the science, education and business sectors, conflict resolutions, accounting practices, corporate governance structure, labour relations, etc." (OECD 1999:21-22). At the same time, it is well documented that regions can differ culturally

within their national setting due to factors such as history, location, and economic structure which are all part of the wider set of "territorially-embedded factors [that] influence the process of innovation" (Rodríguez-Pose & Crescenzi, 2006:4).

Secondly, what differentiates the national from the regional system of innovation concept is the emphasis on small or smaller firms. As Cooke and Morgan (1995) put it, "innovation is first and foremost a collective social endeavour, a collaborative process in which the firm, especially the small firm, depends on the expertise of a wider constituency than is often imagined (workforce, suppliers, customers, technical institutes, training bodies, etc.)." The organisational capacities of these networks of relationships become a crucial determinant of the performance of the regional innovation system (Nauwelaers & Reid, 1995).

Thirdly, the difficulty with both national and regional systems of innovation is capturing the systemic aspect of the 'system of innovation'. Because this is what makes each system unique, this also makes it difficult to transfer good practices elsewhere.

Table 2.1: Definitions of 'regional systems of innovation' according to the literature
"The constellation of institutions at the regional level contributing to the innovation process has come to be known as the regional innovation system" (Gertler et al., 2000:694, quoting Braczyk et al., 1998).
"A geographically defined, administratively supported arrangement of innovative networks and institutions that interact regularly and strongly to enhance the innovative outputs of firms in the region" (Cooke & Schienstock, 2000:273-274).
Two key dimensions of innovation activity are constitutive in a regional system of innovation: "the governance infrastructure and the business superstructure" (Cooke, 1998:19). The 'systemness' of a regional innovation system can be assessed by analysing the extent in which there is "interactive governance, meaning good knowledge flows among intermediaries and with firms, and on the other hand, inter-firm interaction, networking, learning and so on" (Cooke, 2001:954).
"(…) this set of institutions, both public and private, produces pervasive and systemic effects that encourage firms within the region to adopt common norms, expectations, values, attitudes and practices – in short, a common culture of innovation (…). The list of institutions most frequently implicated in this type of analysis includes not only the usual R&D infrastructure (universities, technical colleges, public and private labs), but also industry-specific service centres for technology transfer and market analysis, local training councils, producers' associations, chambers of commerce and suppliers' clubs, all of which provide opportunities for social learning-through-interaction" (Gertler et al., 2000:694-695).
"A set of interacting private and public interests, formal institutions, and other organizations that function according to organizational and institutional arrangements and relationships conducive to the generation, use, and dissemination of knowledge" (Doloreux & Parto, 2005:134–135 quoting Doloreux, 2003).

> "The regional innovation system can be thought of as the institutional infrastructure supporting innovation within the production structure of a region" (Asheim & Gertler, 2005:299).

> "To construct regional advantage, the combined capacity for knowledge creation and exploitation in regional innovation systems is considered one of the most important resources for regional development. Hence, the importance of private-public complementarities in the knowledge economy is emphasized and the promotion of interactive learning between regional economic agents is seen as an essential task of regional innovation policy" (Coenen, 2007:803).

> "Cooke (1992) is widely attributed as coining the term 'regional innovation system' in his Geoforum article which provides a typology of different types of RIS further developed by Cooke (1998). The subsequent development of the RIS literature (…) has highlighted the role of regional learning processes and institutions in an evolutionary framework" (Asheim et al., 2011:878).

Table 2.1 gives a non-exhaustive overview of definitions found in the academic literature. For the purpose of this study, a regional innovation system is defined as consisting of "elements and relationships which interact in the production, diffusion and use of new, and economically useful, knowledge" (Lundvall, 1992:2) where systemic failures can occur in the institutional composition of these elements and in the quality of the linkages between those elements. In this study, I follow Tödtling & Trippl's (2005) modification of Autio's (1998) schematic representation of a regional innovation system distinguishing between two sub-systems: (1) a knowledge application and exploitation sub-system, consisting of 'knowledge users' and (2) a knowledge generation and diffusion sub-system, consisting of 'knowledge creators' with policy addressing bottlenecks in both sub-systems. This schematic representation, shown in Figure 2.1, matches how the region within the RITTS programme is described in terms of a dichotomy between the demand for ('knowledge users') and the supply of knowledge ('knowledge creators') with policies aiming at bridging the gap between the two. The concept of 'regional innovation system' refers to a regional level of action and interaction. In this conceptual context, the definition of 'region' is 'a bounded territory with particular attributes' (Shearmur, 2011:1225).

2.4 A regional innovation systems typology according to the dominant regional innovation *problématique*

According to the literature, a regional innovation system is made up of two sub-systems embedded in a common regional socio-economic and cultural setting (Tödtling & Trippl 2005:1205): (i) the knowledge application and exploitation sub-system; and (ii) the knowledge generation and diffusion sub-system. A 'system' consists of elements and relations which generate processes that are either conducive to innovation or not. Two main types of failure or system deficiencies are considered to affect the system's functioning.

Figure 2.1:   Schematic representation of a regional innovation system
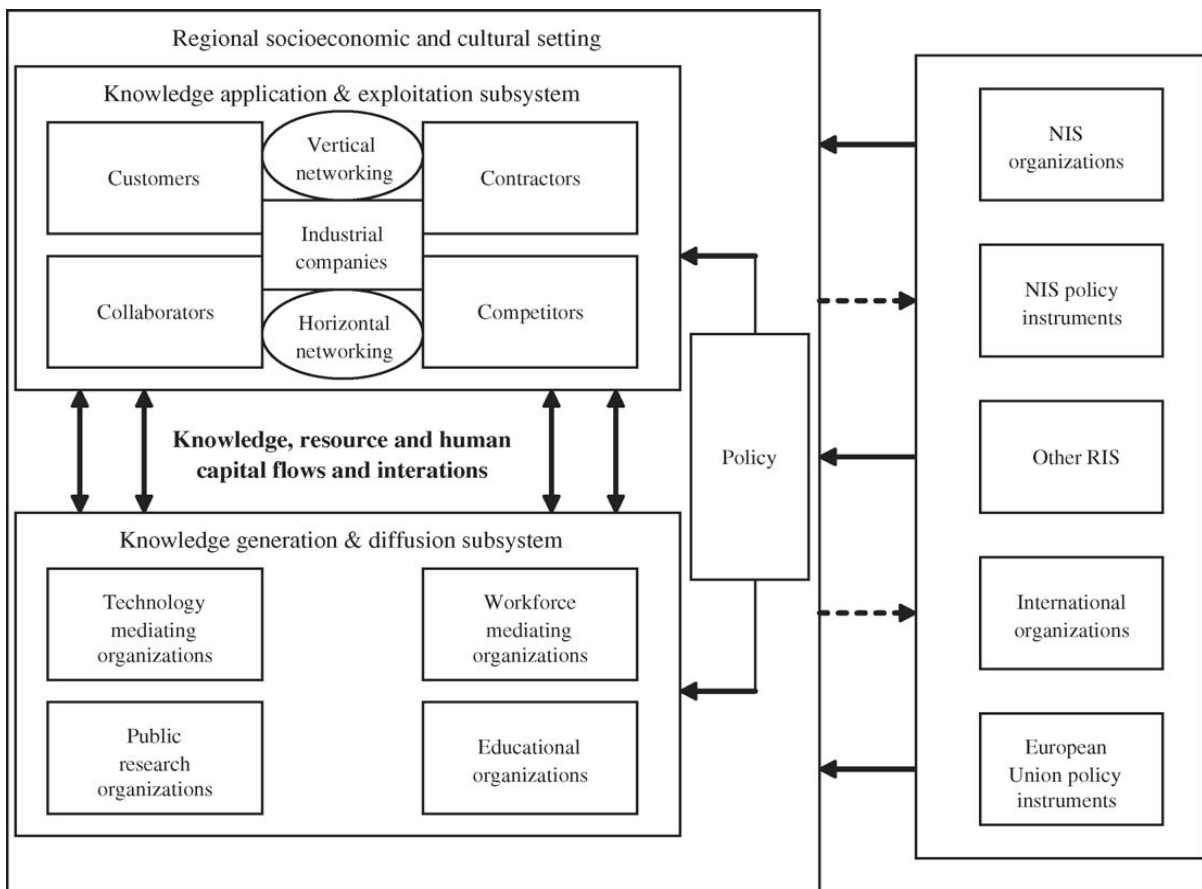
Source: Tödtling & Trippl (2005), modification of Autio (1998).

Firstly, there are those failures that relate to 'missing elements' in the RIS sub-systems. For example, peripheral regions often struggle with a limited economic production structure and underdeveloped institutional support infrastructure; they are characterised by 'organisational thinness'. Old industrial regions have an abundance of traditional industries and outdated technologies, yet lack the new innovative firms and institutional support infrastructure for new technologies.

Secondly, there are those failures that relate to 'missing relationships' between the elements within and between the sub-systems of a RIS. Poor innovative performance might occur even when all elements are present, due to missing or dysfunctional interaction between the elements. Metropolitan regions, for example, might be faced with sub-optimal innovation performance lower than could be expected on the basis of their economic production structure and institutional support infrastructure. Fragmentation and lack of communication and cooperation between the RIS elements constitute an innovation barrier responsible for the region's sub-optimal innovation performance. The reverse problem can also occur when links and relationships between the two sub-systems are so strong that they block the emergence of alternatives. Grabher (1993) referred to this phenomenon as the 'the weakness of strong ties'. Old industrial regions are often characterised by these so-called lock-

in effects that undermine the innovative capabilities of this particular regional economy (Hassink, 2000).

For the purpose of this study, three main innovation system failures of a regional innovation system are distinguished in line with the typology presented by Isaksen (2001), Nauwelaers & Wintjes (2003), and Tödtling & Trippl (2005). These are: 'organisational thinness', 'lock-in', and 'fragmentation'. Notwithstanding the fact that each region type might, in reality, face a mix of innovation problems (the dotted arrows in Figure 2.2), each of the three innovation system deficiencies are considered to be the dominant innovation *problématique* in a particular type of region (Tödtling & Trippl 2005). In the highly stylised view of this 'prototypology',[9] peripheral regions are seen to suffer first and foremost from 'organisational thinness'; old-industrial regions from 'lock-in'; and metropolitan regions from 'fragmentation' (the three big arrows in Figure 2.2). Figure 2.2 presents this typology.

Figure 2.2:   **Regional innovation system deficiencies and types of regions**
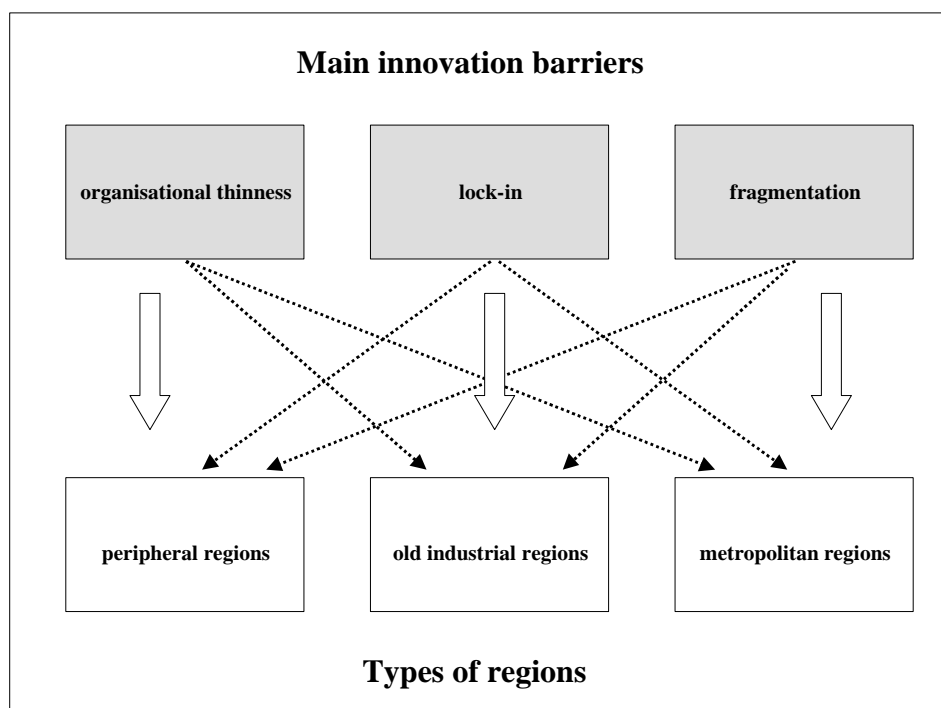
Source: Tödtling & Trippl (2005); Martin & Trippl (2014).

The role of regional innovation policy is then to strengthen the innovation capacity of innovation actors in the region by addressing systemic failures in the generation, diffusion, and application of knowledge.

2.4.1 Innovation *problématique* in peripheral regions

'Organisational thinness' is a characteristic deficit of the regional innovation system in peripheral regions, notwithstanding the possible presence of other innovation system

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[9] Cannell & Dankbaar, 1996. It goes without saying that variations can be found in the real world; for the purpose of this study, each region-type represents a dominant innovation system deficiency 'typical' for that region-type.

deficiencies as well. It refers to a lack of innovation-relevant players as missing 'elements' of the system, be it among the 'knowledge users' such as firms, industrial clusters and demanding consumers and/or among the 'knowledge creators' such as universities, R&D institutes, and highly qualified human resources.

In terms of economic production structure, peripheral regions often display an above average proportion of employment in the primary sector (agriculture, fishery, forestry). Local SMEs and/or branch plants are the dominant firm types. Clusters are often missing or weakly developed. To the extent that firms engage in innovative activity, the output tends to be incremental innovations and/or technology-using process innovations. Firms tend to be technology-contingent, whether they be large-scale, intensive firms or small supplier-dominated firms (Cannell & Dankbaar, 1996), and belong predominantly to traditional industries such as food processing, bulk materials (steel, glass, aluminium), or car parts assembly.

The number of firms undertaking R&D is low, as are product innovations. The low technological competence of firms in turn hinders the development of 'absorptive capacity', that is, their ability to acquire new knowledge developed elsewhere in order to assimilate and apply it to commercial ends (Cohen & Levinthal, 1990; Muldur et al., 2006). In addition, the geographical location of peripheral regions – at the periphery, far away from the country's political and economic agglomeration centres – dramatically decreases the possibility of 'knowledge spillovers'.[10]

A lack of innovation-relevant players is also apparent among the 'knowledge creators', in the knowledge generation and diffusion sub-system. Universities and research institutes are often absent in peripheral regions. Education and training is provided for low- to medium-level qualifications; the more specialised and higher-level qualifications are rare. Outmigration of young people to receive education or find a job outside the region is common and sometimes has been for generations. The knowledge transfer organisations that have been established in peripheral regions, often through public policy initiatives, do not manage to provide the services firms need. Networking among the 'knowledge suppliers' in the region as well as between them and the 'knowledge users', the local firms, is limited and seems to happen only occasionally (as opposed to systematic).

In addition to economic indicators such as GDP per capita and R&D investments, peripheral regions score also badly on "socio-economic local factors that [if scoring well] make the presence of favourable regional systems of innovation more likely" (Rodriguez-Pose & Crescenzi 2006:7). These factors include educational achievements, productive employment of human resources, and demographic structure.

2.4.2 Innovation *problématique* in old industrial regions

'Lock-in' is a characteristic problem of the regional innovation system in old industrial regions, notwithstanding the possible presence of other innovation system failures as well. Whereas peripheral regions have few innovation-relevant elements with limited networking within and between the sub-systems of the regional innovation system, old industrial regions face the opposite problem. They are institutionally 'thick' regions with dense networks among all innovation-relevant players, who are unfortunately in mature, declining industries and out-

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[10] Calculations done by Rodriguez-Pose and Crescenzi (2006:22) arrived at a 180-minute travel time limit for interregional knowledge flows "to produce a positive and significant effect on regional growth performance" when combined with intra-regional R&D efforts.

dated technologies. These 'strong ties' are the region's weakness (Grabher, 1993), as it is very difficult to change the focus of both sub-systems into a different direction, having experienced long periods of economic growth before the decline set in (Boschma & Lambooy, 1999). These regions are 'locked in' so to speak and the simultaneous existence of various forms of lock-in seriously hampers their development potential and innovation capabilities (Tödtling & Trippl, 2005). Functional lock-ins in inter-firm networks, cognitive lock-ins sharing a common world view, and political lock-ins between public and private key actors, all hamper the very much needed industrial restructuring (Hassink, 1992; Grabher, 1993; Tödtling & Trippl, 2005). Boschma & Lambooy phrased 'lock-in' as "interaction patterns between economic, political and institutional actors that may affect their ability to react to new changing circumstances" (1999:6).

In terms of economic production structure, old industrial regions are often specialised in mature industries such as textiles, shipbuilding, coal-mining, steel-making, such as the case in the Ruhr area in Germany, Nord-Pas-de-Calais in France, and Wales and North East England in the United Kingdom, but also in other branches characterised by overspecialisation, such as the watch-making industry in the Swiss Jura Arc (Tödtling & Trippl, 2005). Large firms dominate the regional economy; small and medium-sized enterprises exist mainly through supplier-user relationships. Although innovative activity takes place at a much larger scale than in peripheral regions, it concerns mainly incremental, technology-using, process innovations on the basis of mature technological trajectories.

The knowledge generation and diffusion sub-system is organisationally 'thick' (universities, polytechnics, R&D institutes, vocational training institutes, etc.), highly specialised, and able to provide for all levels of educational qualification, be it with a stronger emphasis on 'technical' than on 'managerial' and 'analytical' skills. What is problematic is that in the past this sub-system has been set up catering to the needs of now declining industries and outdated technologies.

Other actors in the knowledge support infrastructure, such as technology transfer organisations, are more successful in bringing their services to firms, particularly large ones, than their counterparts in peripheral regions. This is because these types of firms are better able to benefit from these services despite the equally supply-oriented approach of the technology transfer infrastructure. Although the knowledge support infrastructure in old industrial regions consists of many (specialised) organisations, coordination among them and orientation on innovation problems as experienced by regional firms is low. As with peripheral regions, public money helped establish large parts of the knowledge support infrastructure pursuing given policy objectives.

Applying the afore-mentioned socio-economic factors to old industrial regions, a mixed picture emerges, at best. Long-term unemployment and 'unemployability' are dominant features of the regional labour market in old industrial regions as a result of the collapse of the economic mono-structure. Educational achievements are mixed, displaying higher level qualifications in the younger population combined with lower level qualifications in the older workforce members.

2.4.3 Innovation *problématique* in metropolitan regions

'Fragmentation' is a characteristic problem of the regional innovation system in metropolitan regions, notwithstanding the possible presence of other innovation system deficiencies as well. Where the two previous region types have been labelled as 'innovation-averse' societies

(Rodriguez-Pose, 1999), this regional type has been labelled 'innovation-prone'. And indeed, at first glance, these types of regions seem to have all the innovation-relevant actors and socio-economic factors in place for favourable innovation systems. Metropolitan regions – Frankfurt and Hamburg in Germany, Vienna in Austria, the greater Eindhoven region (South East Brabant) in the Netherlands, the greater Brussels area in Belgium – have "the leading research organisations and universities, business services, as well as headquarters of international firms and high-tech companies" (Tödtling & Trippl, 2005:1211). "In general, metropolitan regions are regarded as centres of innovation, benefitting from knowledge externalities and agglomeration economies" (Tödtling & Trippl, 2005:1211).

Yet, the presence of so many innovation-relevant actors in both sub-systems does not always match the region's actual innovation performance;[11] it stays below expectations. And this is because "a working innovation system does not exist automatically, even if all the relevant players are present in a region" (Isaksen, 2003:72). It is through the interaction between these innovation-relevant players in the production, diffusion and use of new, and economically useful, knowledge that the innovative performance of firms and hence of their locality is determined. Too often in metropolitan regions, the two sub-systems operate independently from one another, and within both sub-systems similar organisations are viewed as competitors, preferring not to co-operate and refraining from collaboration and coordination. Trust, particularly the lack of it, is an issue in the attitude of local players towards cooperation. For firms, the lack of trust is often linked to issues of secrecy and proprietary knowledge, reducing the willingness to engage in inter-firm relations. For organisations in the support infrastructure, the lack of cooperative behaviour is often linked to competition over public funds, reducing the interest to invest in, for example, university-firm linkages.

Based on the elements, the regional innovation system of metropolitan regions has the potential to deliver outstanding innovation results, but the fragmented nature of the innovation system lacking the inter-actor networks and interactive learning modes is a major obstacle for innovation. Table 2.2 summarises the three types of regional innovation systems according to their main innovation system deficiencies.

Table 2.2:	Regional innovation system deficiencies by regional innovation system type		
	Types of regional innovation system		
	Peripheral regions ('organisational thinness')	Old industrial regions ('lock-in')	Metropolitan regions ('fragmentation')
System deficiencies			
Firms and regional clusters			
Cluster characteristics/ problems	Clusters often missing or weakly developed	Often specialised in mature industries	Many industries/services but high profile and knowledge-based clusters often missing
	SME dominance	Large firm dominance	
Innovation activities	Low level of R&D and product innovation,	Mature technological trajectories, domination of incremental and process innovation	R&D in headquarters of large firms and in high-tech companies, product innovation and new firm

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[11] Measured, for example, in terms of development of new technologies; radical, breakthrough innovations; formation of new, high-tech firms; emergence of new sectors; or the percentage of exports in new products, services, processes.

	emphasis on incremental and process innovation		formation often below expectations
Knowledge generation and diffusion			
Universities/research organisations	Few or low profile	Often oriented towards traditional industries/ technologies	Many and high-quality, but often weak industry links
Education/training	Emphasis on low- to medium-level qualifications	Emphasis often on technical skills; managerial skills and 'modern' qualifications often missing	Large variety of schools and other educational organisations
Knowledge transfer	Some services available but in general 'thin' structure; lack of more specialised services	Many and specialised transfer organisations but weakly coordinated	In general a high density of such services, mostly commercialised
	Often too little orientation towards demand	Often too little orientation towards demand	
Networks			
Network characteristics/ problems	Few in the region due to weak clustering and 'thin' institutional structure	Often characterised by technological and/or political lock-ins	Market links dominate, often little cluster- and innovation-related networking

Source: Tödtling & Trippl (2005); Martin & Trippl (2014).

2.5 The theoretical 'context-specific' policy response to the regional innovation *problématique*

The new insight brought by the regional innovation systems concept was that the firm should no longer be seen as an isolated actor; the individual firm depends on its surroundings, the business environment, to become and stay competitive (Kilper & Latniak, 1996; Hassink, 2000). With firms being part of a wider 'knowledge system', specific contextual factors in the immediate business environment might hamper or favour innovation processes. If this 'knowledge system' operates effectively, so the assumption, then innovation performance of firms – all firms – can be enhanced. What happens, though, is that firms, particularly those that are not at the forefront of science and technology, often do not "manage to utilize the experience and knowledge of other firms, research organizations, the government sector agencies, etc. in innovation processes" (Asheim & Isaksen, 2003:40).

Regional innovation policies are required to improve innovation-relevant mechanisms considered crucial for transferring and absorbing knowledge and know-how. As each region provides very different contextual conditions, the inescapable conclusion of the regional innovation literature is that policies have to be context-specific in order to be effective. Sectoral sources of innovation, individual firms' innovation activities and innovation system failures differ greatly between regions rendering any standard, 'one-size-fits-all' policy prescription obsolete (Tödtling & Trippl, 2005). The localised nature of innovation processes calls for 'customised' policy solutions dealing with the specific innovation problems of the region.

The remainder of this section will give examples of 'differentiated' policies according to region types and corresponding innovation *problématiques* based on Tödtling & Trippl (2005).

2.5.1 Innovation policy response in peripheral regions

In view of the 'organisational thinness' hindering the proper functioning of the regional innovation system in peripheral regions, what policy response is presented in the innovation literature as an appropriate solution? As the basic elements (let alone interactions) of this type of regional innovation system are either missing or weakly developed, and hence the region offers very little to build on, the simple answer is 'creating something new'.

As far as the knowledge application and exploitation sub-system is concerned, the innovation deficits of firms, SMEs in particular, have to be tackled. They need to be made aware of the importance of innovation to survive as a business and receive help in upgrading their technological and organisational skills, by some referred to as 'catching-up learning' (Tödtling & Trippl, 2005). Upgrading the innovation capabilities of local firms will also help to strengthen their absorptive capacity for knowledge developed elsewhere. Performing in-house R&D has been argued to be a precondition for firms "to recognise and use, and hence adopt, technologies that have been developed elsewhere" (OECD, 1997:41).

Supporting cluster formation, new firm formation as well as attracting new firms to the region is another proposed solution. Anchoring innovative companies from outside the region to help develop new clusters or strengthen existing ones in the region is considered more beneficial than pursuing old-fashioned inward investment in attracting footloose branch plants, call centres, assembling factories, and the like for mere job creation.

As far as the knowledge generation and diffusion sub-system is concerned, creating or attracting new 'knowledge support organisations' is proposed, on the condition that they meet the needs of the regional economy. No economy is served with 'cathedrals in the desert' (Grabher, 1993). Possible ways to improve the regional knowledge infrastructure are upgrading existing knowledge organisations to provide higher-level qualifications than currently present in the region; enlarging the current knowledge infrastructure with new technical colleges, engineering schools, management training centres, and so forth; attracting branches of national universities or research institutes as 'local antenna'; and setting up cooperation and exchange schemes with other knowledge organisations in the country and/or abroad.

Finally, the elements of both sub-systems need to be better inter-linked. This entails that the services of the publicly funded support infrastructure (science parks, technology transfer agencies, market information service providers, etc.) need to be designed and delivered in a more demand-led way as opposed to supply-push. These organisations need to acquire a better understanding of the innovation needs of their clients, the local firms. It also entails that local firms have to be actively supported in building up relationships with regional knowledge suppliers in order to make their innovation needs understood (and through these relationships they will better understand these needs themselves). For SMEs, the role of intermediary organisations is crucial to help articulate needs, as is the role of 'peer' networks as learning channels (Nauwelaers & Wintjes, 2003). Besides intra-regional networks, helping local firms to build up relationships with knowledge sources outside the region is very important for overcoming the geographical isolation of peripheral regions and broadening the supply of potentially useful knowledge.

2.5.2 Innovation policy response in old industrial regions

In view of the 'lock-in' hindering the proper functioning of the regional innovation system in old industrial regions, what policy response is presented in the innovation literature as an appropriate solution? Whereas innovation-relevant actors in peripheral regions have to 'learn' new ways and new habits (learning how to innovate, learning how to network), those in old industrial regions have to 'unlearn' old ways and old habits that were successful in the past, but no longer are. Policy actions have to be "strategically oriented on breaking path dependency and facilitating the renewal of the regional economy" (Tödtling & Trippl, 2005:1214). Renewal can entail a transition towards new sectors, new technological trajectories, new types of innovation, new markets, new networks, new approaches, new beliefs, new visions, and so forth, and policy actions can support this transformation. A 'retraining' of the region's human resources (or alternatively, new hires) is indispensable for this renewal, this transition to succeed. This type of regional innovation system experiences the opposite problem of the peripheral one, one in which strong elements are tightly and systematically interconnected.

As far as the knowledge application and exploitation sub-system is concerned, attracting new industries to the region is very appealing as a restructuring strategy to regional policy-makers, yet often entails the danger of replacing one old economic mono-structure with a new one (for example coal & steel industry replaced by an automotive branch plant). The policy challenge is to attract new industries and/or support new technologies that bring complementary knowledge to existing clusters. This strategy will help to open up new viable alternatives towards a more diversified economy and simultaneously help the modernisation and transformation of existing firms and clusters. Foreign Direct Investment (FDI) can also help the region to establish new international partnerships.

As far as the knowledge generation and diffusion sub-system is concerned, new knowledge support organisations are required (such as universities and research centres, but also intermediaries) "backing business activities in new industrial and technological fields and to build up providers of new skills" (Tödtling & Trippl, 2005:1214). New educational qualifications and training modalities might need to be provided by these organisations. Not only will the new actors in both sub-systems help bring about the much-needed new course for the region, they will also interact and establish new networks that in turn are connected to different networks outside the region. These new networks in turn can be beneficial in opening up and revitalising existing networks.

Of all the changes required for the turnaround of old industrial regions, changing the 'institutional lock-in' of the region is often the biggest challenge. Existing institutions (in the sense of organisations) have a vested interest in the status quo and combined with the resources at their disposal and strong networks built up over many years, they may attempt to block the much-needed institutional change. The system of shared beliefs and values of the region is an equally forceful institutional barrier for renewal and new regional 'images' need to be created.

2.5.3 Innovation policy response in metropolitan regions

In view of the 'fragmentation' hindering the proper functioning of the regional innovation system in metropolitan regions, what policy response is presented in the innovation literature as appropriate solution? Despite having well-equipped sub-systems that often perform well

as individual elements, metropolitan regions do not manage to live up to their full innovation potential, because the interactions, networks, partnerships, exchange, and learning modalities between the elements are either missing, of low quality, or simply dysfunctional. Whereas the innovation system of old industrial regions could be portrayed as highly systemic (unfortunately, in declining industries and outdated technologies), the opposite could be argued to be the case for the innovation system of metropolitan regions: a lack of systemic interaction.

In order to encourage more systemic interaction within and between the region's sub-systems, the innovation literature presents several policy solutions. For the knowledge application and exploitation sub-system, these range from attracting new innovative firms or leading global companies both with high 'synergy potential' for existing clusters; assisting business start-ups and spin-offs in knowledge intensive sectors and services; focussing on supporting radical innovations through partnerships between science-based industries (e.g. pharmaceuticals, chemicals) and universities and research institutes; putting in place schemes to foster inter-firm collaboration and innovation networks; etc.

Policy solutions presented in the innovation literature to overcome fragmentation in the knowledge generation and diffusion sub-system include actions such as strengthening the local knowledge base, such as through fostering specialisation of regional universities and polytechnics (in synergy with the region's main industrial complexes); promoting exchanges of students and/or researchers between universities and local firms; encouraging university–industry partnerships as well as cooperative schemes between higher education institutes and SMEs; reorganising the support infrastructure by reducing the number of similar intermediary organisations (technology transfer agencies, business support services, etc.); and putting in place a revised, more specialised, more demand-led, higher-quality support system that can deliver on its promises, and so forth.

As 'trust' among innovation-relevant actors is often absent in metropolitan regions and feelings of 'competition' and 'secrecy' prevail (among firms, but also among public sector organisations), regional government can also invest in funding services from which many firms can benefit, including technical information services, market, and sector-relevant information, technological trends, metrology services, patent and license information, results of publicly funded R&D, statistical databases, R&D partner search databases, and technology demonstration. Table 2.3 summarises the idealised 'matching' policy responses to the region's dominant innovation *problématique* for each of the three regional innovation system types.

Table 2.3:	**Idealised regional innovation policy responses by regional innovation system type**		
	Types of regional innovation system		
	Peripheral regions ('organisational thinness')	Old industrial regions ('lock-in')	Metropolitan regions ('fragmentation')
Policy dimensions			
Strategic orientation of regional economy	Strengthening/upgrading of regional economy	Renewal of regional economy	Improve position of regional economy in global knowledge economy
Innovation strategy	'Catching-up learning' (organisation, technology)	Innovation in new fields/trajectories	Science based and radical innovation, new ventures

	Improve strategic and innovation capabilities of SMEs	Product and process innovation for new markets	Enhance interaction between industry and knowledge providers
Firms and regional clusters	Strengthen potential clusters in the region	Support clusters in new/related industries or technologies	Support emerging clusters related to region's knowledge base
	Link firms to clusters outside the region	Restructuring of dominant industries	Develop specialisation advantages to achieve synergies and international visibility
	Attract innovative companies	Diversification	Attract cluster-related FDI
	New firm formation	New firm formation; attract cluster-related FDI	Support start-ups and spin-offs in knowledge-based industries
Knowledge providers	Attract branches of national research organisations with relevance to the regional economy	Set up research organisations and universities in new relevant fields	Expand and set up high-quality universities and research organisations in relevant fields
Education/skills	Build up medium-level skills (e.g. technical colleges, engineering schools, management schools)	Build up new skills required (technical colleges, universities)	Set up universities/ schools for highly specialised qualifications and skills required
	Mobility schemes (e.g. 'innovation assistants' for SMEs)	Attract new skills	
Networks	Link firms to knowledge providers and transfer agencies inside the region and beyond, demand-led approach	Stimulate networking with respect to new industries and technologies on regional, national, and international levels	Promote regional networks among firms, encourage local research-industry interfaces

Source: Tödtling & Trippl (2005); Martin & Trippl (2014).

2.6 Summary

According to the regional innovation systems literature presented in this chapter, regional innovation policy is considered 'context-specific' when the proposed course of government action serves to address the region's dominant innovation *problématique*. The term regional innovation '*problematique*' refers to particular system deficiencies linked to a particular regional innovation system type.

During the 1990s and 2000s, the Regional Innovation System (RIS) approach became popular among policymakers. Two European pilot programmes, RITTS and RTP/RIS, were among the first to apply this RIS concept as a diagnostic tool to help regional policymakers make better-informed policy decisions.

Schematically, a regional innovation system is made up of two sub-systems: (1) a knowledge application and exploitation sub-system, consisting of firms in their function as 'knowledge users', organisations that have a demand for knowledge; and (2) a knowledge generation and diffusion sub-system, consisting of 'knowledge creators', organisations that supply knowledge.

In this study, regional innovation policy is seen ensuring an optimal functioning of the regional innovation system by removing so-called 'systemic failures' within and between these two sub-systems. Systemic failures can arise in the institutional composition of the system's elements and in the quality of the linkages between those elements.

To ensure a useful framework for analysis of the case studies, this study distinguishes between three types of regional innovation systems according to their dominant innovation system deficiencies. In this ideal-typical representation of reality, peripheral regions are seen to suffer first and foremost from 'organisational thinness'; old-industrial regions from 'lock-in'; and metropolitan regions from 'fragmentation'.

In order for public policy to be effective, it has to be context-specific by means of a policy mix of measures that tackle the bottlenecks of the regional innovation system in question. Literature on regional innovation systems assumes that 'context-specific' regional innovation policy follows from properly diagnosing the region's innovation *problématique*. Based on this assumption, this chapter introduced an analytical heuristic framework that will be used in the six case studies to diagnose the region's innovation problems and to assess whether the proposed policy responses follow logically from the diagnosis.

While this chapter looked at 'context-specific' regional innovation policy as a subject matter, the next chapter will look at regional government as the actor designing such a policy.

3

Defining the roles of regional government in contextualised policy-making

"It may seem a strange principle to enunciate as the very first requirement in a hospital that it should do the sick no harm"

Florence Nightingale (1820-1910), British founder of modern nursing

3.1 Introduction

Within the Regional Innovation Systems literature, regional government is, albeit not a panacea, nevertheless perceived as an "important ingredient in the recipe for regional development" (Morgan & Nauwelaers, 1999:14). For RIS scholars, two attributes in particular make regional government a more important actor in the region than others. Firstly, due to its policy capacity, including its capacity to choose which problems get access to the political agenda, regional government is mandated to find solutions to problems perceived to be of public concern. Due to its intrinsic knowledge of the region, regional government is assumed to be able to identify the regional innovation *problématique* and propose regionally differentiated solutions. Secondly, due to its institutional position in the region representing the state, it is assumed that parties are more willing to listen what this 'authority' actor has to say and act upon it. Due to its institutional position, it is assumed to be relatively easier for a regional government actor to bring together innovation-relevant parties that might otherwise not get together.

For RIS scholars this ability to design and deliver 'context-specific' regional innovation policies and craft "networks through which agents are able to collaborate for mutually beneficial ends" (Morgan & Nauwelaers, 1999:14) is determined by the level of regional autonomy, favouring regional government in federal government systems. Regionalisation and decentralisation matter for innovation and policies promoting that. But what about those regions that are not endowed with regional autonomy, as is the case for regions in centralised unitary government systems? Can they play an autonomous role to strengthen the region's innovation performance or are they simply doomed? The Regional Innovation Systems literature is rather pessimistic about this.

Public Administration scholars do not share this pessimistic outlook for regions without regional autonomy. This is because Public Administration scholars consider the RIS view of regional government's main attributes as being too limited, not doing justice to the full set of roles regional government can play. This second theoretical chapter looks into the Public Administration literature to describe the different roles regional government can play irrespective of the degree of autonomy bestowed upon the region. This is described in section 3.3. Please note that 'autonomy' and 'authoritative decision-making power' are used interchangeably in this study.

The sheer presence of regional government bestowed with formal competencies enabling it to engage in 'authoritative decision-making' (Schakel, 2009) and to apply its formal institutional position for orchestrating regional networking is not sufficient to guarantee success. For RIS scholars what matters is 'competent' regional government (Cooke & Morgan, 1998; Morgan & Nauwelaers, 1999; Isaksen, 2003; Asheim et al., 2011). Being 'competent' is defined in terms of being responsive to the nuances of regionally differentiated environments as opposed to copying successes from elsewhere. Its definition also includes being interactive with innovation-relevant actors, treating them more like 'partners' and less like 'subjects', and being sensitive to feedback from users of innovation-support services in order to learn from this feedback and improve these services (Murray 1991, 1992, quoted in Morgan & Nauwelaers, 1999). To put it differently, 'competent' regional government is government that is responsive.

Although Public Administration scholars do not disagree with this quality criterion derived from an instrumental view of government, they consider this view as too limited and

as overlooking other dimensions of governmental quality. For this reason, this chapter looks into the Public Administration literature to describe what government functions can be distinguished (section 3.3) and how the 'quality' of regional governance in the execution of these functions can be assessed (section 3.4). By zooming in on the different dimensions of 'competent' regional government, these quality criteria will help to understand the design of 'context-specific' regional innovation policy as a multi-layered phenomenon. By combining the four functions of regional government with the four levels of governance and governance quality in a 4x4 matrix, a Public Administration framework is constructed. In section 3.5, this matrix is applied to the design of 'context-specific' regional innovation policy and the sixteen possible expressions of the regional government role are described. This framework will serve as a heuristic tool to analyse the regional government roles in the six case studies. Section 3.6, finally, concludes the chapter with a short summary. The previous chapter dealt with the first variable of the study – regional innovation *problématique* – and explained the concept in this study setting. This chapter deals with the second variable of the study – the administrative position of regional government – and starts off in section 3.2 by defining and positioning this variable in the context of this study.

3.2 Understanding the region's formal administrative position within the nation-state

In this study 'regional government' is defined as a sub-national, regional tier of national government to which political power and/or administrative tasks have been allocated and which are executed within a given territory of that nation-state (Van Braam, 1986). The concept of 'regional government' refers to a regional level of government representation and intervention. In this conceptual context, the definition of 'region' is "a meso-level political unit set between the national or federal and local levels of government" (Cooke, 2001:953). 'Regional governance' then refers to the 'process of execution', the way in which regional government executes these administrative tasks and/or political power. In this study, the quality of regional governance is assessed at four different levels of analysis. To better understand why the degree of regional autonomy matters to Regional Innovation System scholars, this section starts with clarifying five key notions linked to a region's formal administrative position. These are: the type of power allocated; the amount of power allocated; the basis of power allocation; the difference between 'power' and 'influence'; and the state traditions affecting how power is executed. A region's administrative position is the managerial room for manoeuvre of regional government within the spatial distribution of power in a government system.

3.2.1 From the viewpoint of government system types

On the first notion, the type of power allocated, all states beyond a minimum population size threshold face the need to satisfy spatial requirements of 'democracy' and 'administration'. This is achieved through 'decentralisation', a process by which power is delegated to lower levels in a territorial hierarchy of governments within a state (Smith, 1985). At least two main forms of decentralisation have been distinguished in the literature: 'political' and 'administrative' (Smith, 1985; Van Braam, 1986) 'Political' decentralisation refers to those instances where 'political' authority (as opposed to 'administrative', managerial authority) is delegated to sub-national governments. Devolution of political power entails the creation of "political institutions (…) with the right to make policies for their areas over which they have

jurisdiction (…) [and the disposal of] some independent revenues" (Smith, 1985:9). Political decentralisation is based on democratic principles such as representation of the people, and accountability of government is 'downwards' to its voters.

'Administrative' decentralisation refers to those instances where 'bureaucratic' authority is delegated from central government administration to lower tiers of central government in the region or to other sub-central authorities (Ribot, 2002, quoted in Yuliani, 2004). Because administrative decentralisation is about the delegation of administrative tasks and managerial responsibilities as opposed to power to sub-national organisations, the accountability of these organisations is 'upwards' to the central government (Hooghe et al., 2010).

Besides the type of power ('political' versus 'administrative'), regional governments also differ in the amount of power allocated, the second notion. The amount of power varies between different government system types, but also within similar types. Bullmann (1996) distinguishes between four ideal-types of government systems (see Table 3.1). Lijphart (1999) does not view government systems in terms of distinct categories, but prefers to speak of a 'continuum' of countries from the most concentrated amount of power held by the central government to the least and all the degrees in between. Of the thirty-six democracies he studied, Germany and the United Kingdom were located at the extremes of the regional autonomy continuum; Germany, being a federal government system, and the United Kingdom, being a centralised unitary government system.

In addition, the amount of power also varies over time. Research done by Hooghe et al. (2010) showed that the direction of change in the post-World War II era has been overwhelmingly towards 'regionalisation' as opposed to 'nationalisation'. Their database on forty-two democracies shows 56 reforms that weaken regional authority as opposed to 337 reforms that strengthen regional authority, yielding a ratio of 1:6 (Hooghe et al., 2010:67). Confirming Lijphart's empirical finding, the Regional Authority Index developed by Hooghe et al. (2010) places Germany among the countries with the highest level of regional autonomy of all the countries in their database (29.3 in 1994, start of RITTS), whereas the United Kingdom ranks among those countries with the lowest score (9.9, same year).

The third notion is about the basis of power allocation, which is fundamentally different between federal and unitary government systems. In federal government systems, such as Austria, Belgium, and Germany, the division of power between central and regional governments is through constitutional allocation; it is constitutionally 'guaranteed'. As Hooghe et al. (2010:60) put it, federalism is a "constitutionalized system of regional authority which neither the centre nor constituent units can unilaterally change". Which tier makes the final decision is written into the constitution and any violation is subject to judicial review by the country's Supreme Court. 'Regional discretion' – to tackle regional issues with customised policies – is held high as a value of governing the country and is institutionalised in the system (Lijphart, 1999).

In centralised unitary government systems, such as the United Kingdom, any devolution of power to sub-national governments is a political decision taken unilaterally by central government. Central government can equally reverse it. No judicial review is possible on this legislative enactment, since Parliament is the ultimate sovereign authority to judge legislation (Lijphart, 1999). 'Homogeneity' across the nation-state is held high as a governing quality, resulting in a uniform, 'one-size-fits-all' approach to government policies and programs. In

unitary and centralised government systems, the national interest takes precedence over local interests; in federal and decentralised government systems, regional interests are assessed against national interests and vice versa.

The fourth notion deals with the difference between 'power' and 'influence'. Some authors refer to the difference in power attribution as the difference between 'self-rule' and 'shared rule' (Fabre, 2009; Marks et al., 2008). Regional governments in federal states are characterised by 'self-rule' which is the authority exercised by a regional government over those who live in its territory (Marks et al., 2008). Self-rule refers to the capacity of sub-national governments to make decisions without risking being overruled by the central government (Fabre, 2009). 'Shared rule' refers to the ability of regional governments in unitary states to influence central decision-making (Fabre, 2009). Four dimensions of 'influencing' are distinguished, which is defined as the extent to which regional government can co-determine (Marks et al., 2008):
- national legislation (law-making);
- national policy in inter-governmental meetings (executive control);
- the distribution of national tax revenues (fiscal control);
- constitutional change (constitutional reform).

Obviously, the extent of shared rule differs in unitary states, but the point is that regional governments in these multi-level, yet centralised government systems also have channels to express regional needs. And vice versa, regions in federal states still constitute intermediate government levels subject to superordinate governance. In absolute terms, therefore, regions are 'neither autonomous nor sovereign in terms of relations with the nation-state or supranational institutions' (Braczyk et al., 1998). For Public Administration scholars this underlines the need to first consider *all* roles of regional government and investigate how regional government in a particular region acts *on these roles* before concluding that for contextualised policy-making some government system types matter more than others.

The fifth and final notion deals with state traditions affecting the way in which power is executed. In the typology developed by Hesse and Sharpe (1991) on 'state traditions' or 'families of states' in Europe, the 'South-European family' views regional government first and foremost in its function as governing a 'community', whereas the 'Anglo-Saxon family' views regional government more in its function as 'public service deliverer' (Toonen et al., 1998:19). And 'legalism' corresponds more to the 'Continental-European family' that views regional government as an integral part of a wider governmental system (Toonen et al., 1998:19).

Reacting to this typology, Page & Goldsmith (1987), Page (1991), and Goldsmith (1996) pointed out that different government traditions also exist at the sub-national level. Southern European countries, they observed, share 'political localism' characteristics, whereas northern European countries demonstrate more 'legal localism' characteristics. "In a system characterized by legal localism, there is a high degree of administrative regulation from above, while where there is political localism, informal relationships – such as clientelism or more formal settings such as the French *cumul des mandats* – become important" (Loughlin, 2001:11).

Expressed differently, the 'workings' of regional governments within similar government systems can differ because of different 'traditions' of understanding the role of regional

government and the way in which power is executed. Table 3.1 presents a classification of government system types.

Table 3.1:	Four ideal-types of government systems		
1	***Classic unitary states***		
	Have sub-national government only at the local level. Regional structures may exist for administrative purposes, but they are strictly subordinated to the central state.		
	e.g. Denmark, Finland, Greece, Ireland, Luxembourg, Sweden, the United Kingdom		
2	***Decentralised (or devolving) unitary states***		
	Have undergone a process of reform to establish elected regional authorities above the local level. The regional tier enjoys a certain degree of constitutional protection and autonomy, as well as a certain degree of administrative and political decentralisation.		
	e.g. France, the Netherlands, Portugal		
3	***Regionalised unitary states***		
	Are characterised by the existence of a directly elected tier of regional government with constitutional status, wide-ranging autonomy and legislative powers. These countries have gone furthest down the road of regional devolution among the unitary states in the EU.		
	e.g. Italy, Spain		
4	***Federal states***		
	Involve a constitutional sharing of powers and the co-existence of sovereignties. The regional tier exists in its own right and cannot be abolished or restructured unilaterally by the federal or central government.		
	e.g. Austria, Belgium, Germany		

Source: Bullmann (1996:5).

3.2.2 From the viewpoint of regional innovation policy

The notions discussed above serve to explain why typologies of government states in distinct categories such as Bullmann's (1996) have limited explanatory power as to why some regions are better at contextualised policy-making than others. The five key notions linked to a region's administrative position indicate important dimensions of variation and demonstrate that similar government systems can display considerable variation in regional authoritative decision-making. To that variation has to be added the specific organisational characteristics of a particular policy area creating further variation in a regional government's room for manoeuvre.

The Regional Innovation System concept emerged at a time when countries were experimenting with technology transfer and innovation, a new policy area distinct from science and technology (S&T) policies. The latter were traditionally designed and implemented by national ministries in both federal and unitary states. With the emergence of this new policy area, innovation policy, new government actors at different government tiers entered the policy arena in both federal and unitary government systems.

In federal government systems, regions found themselves with a relevant degree of autonomy and resources to "make a strengthening of the regional institutional infrastructure possible, i.e. that more R&D institutes, vocational training organizations, technology centres (…) are involved in firms' innovation processes" (Isaksen, 2003:66). Regionally designed, funded, and executed innovation policies became commonplace in federal systems while federal government continued with the design, funding and execution of science and technology policies. As a result, Canadian scholars Wolfe and Holbrook (2000), for example, argued that in order to understand the national innovation system of Canada, a federal state, one must first understand its regional innovation systems.

In unitary government systems, the emergence of innovation policy shook up the rather uniform system where S&T policies were the premise of central government and S&T instruments had been executed in a non-spatial, 'one-size-fits-all' mode. The result was a much greater variety in the organisational set-up of innovation policy across unitary government systems. Three possibilities seemed to materialise (Isaksen, 2003:67).

Regionally designed, funded, and executed innovation policies not unlike those in federal states occurred in regionalised unitary states such as Spain and Italy. Throughout the 1990s, Spain embraced the possibilities offered by this new policy area and new regional innovation-related institutions were established. In Italy, important innovation policy tools continued to be designed and executed by the central government in Rome. Nevertheless, given the country's territorial distribution of power, innovation policy offered Italian regions the possibility of engaging in regional enterprise and innovation support (Cooke & Morgan, 1998). Lombardia, Italy's economic power region, actively seized this new opportunity passing regional laws to accelerate the uptake of innovation by its SMEs (Isaksen, 2003). Other Italian regions, such as Apulia, chose to continue operating through nationally designed policy instruments for innovation, using national funds and implementing a more standardised approach (Isaksen, 2003).

Regionally designed, but nationally or EU-funded initiatives were the second possibility that materialised in Europe's unitary states. The Dutch regions (known as '*provincies*') are a good example of regions in a decentralised unitary government system that perceived regional innovation policy as a unique opportunity to give this particular government tier more visibility, conveying the message of being in charge of meaningful policy matters (Isaksen, 2003).

The third possibility that emerged were nationally (or EU-) designed and executed regional innovation policies. Regions in countries such as Denmark, Norway, and the United Kingdom mainly organised regional innovation policy through nationally and/or EU-oriented innovation policy schemes, and financial resources and decision-making power was mainly found at the national level (Isaksen, 2003).

3.3 Four main functions of regional government within a government system

Irrespective of the degree of regional autonomy bestowed upon the regional government, Public Administration literature distinguishes between four main functions of regional government (Toonen et al., 1998). They are presented in this section 3.3. Please note that the terms 'function' and 'purpose' of regional government are used interchangeably.

3.3.1 Regional government as an expression of 'community'

A first function of regional government is that of being the institutionalised expression of regional identity, of the region perceived as 'community'. For many, it is the most classical function of regional government (Toonen et al., 1998). According to this purpose, "government is an expression of community and the demand for self-rule on the part of normatively distinct, territorially based groups" (Hooghe et al., 2010:53). As Hooghe et al. point out "regional parties [such as, for example, the Scottish National Party in the United Kingdom, the Basque Nationalist Party in Spain, and Party of the Corsican Nation in France] are ideologically diverse, but single-minded" when it comes to "campaigning for more regional authority and a greater share of resources for their region" (Hooghe et al., 2010:84-85).

Governing the regional community according to the community's preferences is the prototype concept of 'democracy'. 'Participative' democracy sees the direct participation of 'civil society' as the best guarantee to serve regional interests and solve common problems (Toonen et al., 1998). This direct participation can take many forms ranging from lay politicians, to holding referenda, to involving stakeholders. Accessibility of regional government for civil society and transparency in how regional decisions are made are considered important values.

Aware of the potential of 'arbitrariness' when governed *by* the regional community directly, 'representative' democracy prefers governing *on behalf of* the community and sees rule-by-law as the best guarantee for defending and implementing regional preferences. This entails safeguarding components such as regional checks-and-balances, dismantling local power monopolies, and respecting rules and procedures (Toonen et al., 1998).

Several scholars have pointed out that "although the Southern European states Italy, Spain and Portugal can be considered as examples of the Napoleonic type of state, they have a number of economic, social and political characteristics in common that makes them distinctive" (Magone, 2003). This led Magone (2003) to conclude that a distinctive Southern model of politics and administration exists, one that first sees regional government as the expression of 'community'. Characteristics of the 'South-European family', such as "political control of administration, relations between politicians and bureaucrats, political nominations of officials, party patronage and clientelism", render administrations in Southern European countries "fundamentally differ[ent] from the political practice in the rest of Western Europe (…) where trained and qualified professionals run a rational, professional, 'neutral' administration" (Kickert, 2008:226). According to Kickert (2008:225), "legalism and formalism were historically introduced as counter-balance against political interference, and in highly politicised Southern administrations that is still the case."

3.3.2 Regional government as a manager of resources 'to deliver public goods and services'

The second purpose of regional government is to provide public goods and services, a view of regional government as 'public service deliverer'. The characteristics of public goods and services are such that neither individuals acting independently nor markets coordinating demand and supply will be able to deliver these public goods, such as homeland security or the preservation of nature (Hooghe et al., 2010; Wolfson, 1988). Because of economies of scale and externalities affecting neighbouring jurisdictions, the intermediate regional level is considered the optimal policy level for the provision of a certain numbers of public goods and

services, such as urban planning and land use, infrastructure planning, environmental protection, economic development, utility services, and the like.

In this conceptualisation, regional government is perceived less as an autonomous 'political-administrative entity' within a larger, multi-layered governance system and more as an 'organisation' in charge of managing resources in order to deliver public goods and services (Toonen et al., 1998). In the typology of state traditions, the 'Anglo-Saxon family' views regional government first and foremost in its function of 'public service deliverer' with the United Kingdom being the prime example of this tradition. As Kickert (2008:228) points out "(…) the development of the British state from night watch, via paternalistic, to welfare state, and the recent moves to contract and plural state, [has] consequences (…) for the specific British way of public service provision."

3.3.3 Regional government as a distinct 'political-administrative entity' within a larger government system

The third conception of the purpose of regional government is being a 'political-administrative entity' for a given territory, in its own right and in its relation to other tiers of government. 'Region' is seen in terms of territorial demarcation of power. The territorial distribution of competencies across government tiers defines the extent to which regional government can be attentive to contextual conditions. Regional Innovation System scholars mostly refer to this conceptualisation of regional government.

Viewing regional government as a 'political-administrative entity' in its own right being an integral part of a wider governmental system corresponds to the 'Continental-European family' within the typology of state traditions (Toonen et al., 1998:19). The 'Continental-European family' of state traditions encompasses countries such as Austria, Germany, and France, but also the Netherlands, where the heritage of the legalistic Napoleonic and the Germanic *Rechtsstaat* models of state government still shapes current administrative and governmental behaviour (Kickert, 2008).

In this conceptualisation, regional government is perceived as an intermediate government layer, subject to super-ordinate governance of some kind and part of a larger system. For European regions, the process of European integration has meant that the 'wider governmental system' includes the European Union. Within a globalising world, regions – not only European ones – are increasingly exposed to 'multi-level governance'. Multi-level governance refers to "the dispersion of authority away from central government — upwards to the supranational level, downwards to sub-national jurisdictions, and sideways to public/private networks" (Hooghe & Marks, 2002:3). Although 'power' can be a facilitating factor, different modes of operating and different skill sets are required for regions to excel in these wider, multi-actor, multi-level governmental systems.

3.3.4 Regional government as an 'architect of change'

A fourth and final function of regional government centres around its ability to handle change. Change can be interpreted as 'crisis' in which government becomes an institution of 'last resort', the only organisation 'still standing', managing the crisis, ensuring business continuity. However, managing a crisis is different from managing change. A crisis entails an element of surprise (non-planned, non-routine), poses an immediate threat to the organisation and its high-priority goals, and requires a short response time (Rosenthal et al., 2001; Ulmer et al.,

2007). Managing a crisis is acute, and its success depends, amongst other things, on the organisational capacities already in place (Hermann, 1963). Managing change, on the other hand, is a planned, intentional process with a purpose of translating external demands on the organisation into changes *within* the organisation. The post-World War II era is characterised by an ever-increasing pace of change affecting economy and society alike. According to the latter interpretation of change, and the one more relevant to this study, three developments in particular have affected regional government in Europe, namely processes of increasing 'regionalisation', 'globalisation', and 'Europeanisation'.

Firstly, changes induced by 'regionalisation' – a process that increases regional autonomy – have affected regional governments worldwide. Regionalisation "has reshaped the structure of government in every country that is not small [in terms of population size] or already regionalised" (Hooghe et al., 2010:63). Almost 70% of the forty-two countries investigated saw an increase in their Regional Authority Index, a composite indicator developed by Hooghe & Marks that measures the extent of authority exercised by all levels of government below the national level with an average population greater than 150,000 (Schakel, 2009). The increase in regionalisation is linked to the unparalleled expansion of government policy portfolios from the 1960s onwards of which some were considered most efficiently delivered at the regional level such as economic policy, cultural, educational, and/or welfare policy (Hooghe et al., 2010). The changes induced by regionalisation are not merely 'dry' legislative changes 'on paper'. These changes in the attribution of power and policy responsibilities to sub-national policy tiers have to be managed appropriately, often requiring new capacities and capabilities within regional administrations.

Secondly, the increasing 'globalisation' of the economy has accelerated from the 1980s onwards, aided by ever more sophisticated information and communication technologies (ICT), and has induced change through its restructuring effect on the sources of competitiveness of firms, sectors, regions, and nations. This process of increasing integration in world markets has given firms access to larger markets, but also exposure to fiercer competition. Firms have relocated different functions (research and development; production; assembly and testing; transportation and after-sales services, to name a few) to different geographical locations, according to costs to specific expertise sought or to closeness to new markets (ETEPS, 2011). Regions have felt the impact of globalisation 'at their doorstep' with firms closing down or relocating to other regions, and have been competing with other regions to attract new firms, or trying out different policy recipes to restructure regional economies, with varying degrees of success. The changes induced by globalisation put new organisational demands on regional administrations: developing 'marketing' strategies for the region, building up in-house strategic intelligence and/or contracting out to external consultants, lobbying business leaders, conceiving attractive fiscal packages, comparing and benchmarking one with other regions and so forth. It also positioned 'innovation' as a change-coping mechanism at the regional level in an increasingly global world.

Thirdly, the process of European integration has reduced the ability of national governments to insulate regions from market competition due to "EU rules curbing state aid and prohibiting national discrimination in public procurement" (Hooghe et al., 2010:59). As such, the European integration process has impacted upon regions, leaving them exposed to intensified economic competition at the national, EU, and world-global level. At the same time, the European integration process has also enlarged 'redistribution' possibilities through its Structural Funds for regions, as well as institutionalised 'democratic' possibilities, giving regions access to EU decision-making processes. Since the 1993 ratification of the Maastricht

Treaty, which established the Committee of the Regions for that purpose, regions have found themselves becoming part of a European multi-level governance framework. Being given the ability to circumvent national authorities – and interact with the European Union institutions directly – has acted as a reform catalyst at regional level. The changes induced by the European integration process laid bare a need to develop a 'capacity for strategy' at the regional level irrespective of the extent of regional authority granted within the nation-state (Hooghe et al., 2010; Dror, 2001, 2004). Acting within a multi-level governance framework means being able to position oneself vis-à-vis others, understanding regional needs, developing a vision on the region's future, knowing who to ally with, fostering learning, and renewal.

The three developments outlined above – 'regionalisation', 'globalisation', and 'Europeanisation' – have affected all government organisations, national and regional alike, and tested their ability to be an 'architect of change'.

3.4 Four levels of governmental governance quality to assess these functions

The previous section outlined the four main purposes or functions of regional government that have been distinguished in Public Administration theory. How well regional government succeeds in performing these functions can be assessed in accordance with three 'families of administrative values' (Hood, 1991) or three 'quality levels of governmental (as opposed to corporate) governance' (Toonen et al., 1998; Toonen & Staatsen, 2004). More recent Public Administration research has added a fourth level of governance quality (Toonen, 2015). The different 'quality levels' stress different dimensions of 'competent' government and have different assessments of what distinguishes 'good' from 'bad' government. And according to Hood (1991), the same principles could also help to distil those factors that are likely to favour 'success' over 'failure' in the design of policy (which Hood refers to as 'currency'). In line with Public Administration theory, this study distinguishes between the following four levels of governance at which the four government functions can be executed and their quality assessed: 1) operational, 2) procedural, 3) constitutional, and 4) contextual. This section 3.4 describes how 'quality' of regional governance can be assessed at these four levels.

3.4.1 Operational quality level: 'responsiveness' of government

To start with, the first-order, operational quality level shaped by "the neo-liberal, business-like managerial reform trend of the 1980s" (Kickert, 2008:233), the quality of government and its administration is assessed on its 'responsiveness' to problems whose solution requires public sector intervention and its ability to achieve stated objectives in a cost-effective manner. The 'functionality' of government is the key issue in the way in which public goods and services are being 'delivered' to citizens (privatisation, contracting out, certification, quality charters, performance-based management, etc.) (Toonen et al., 1998).

The administrative values centre on setting objectives and "matching resources to narrowly defined tasks and circumstances in a competent and sparing fashion" (Hood, 1991:12). With the standard of success set at 'frugality', the measure of failure becomes 'waste' (Hood, 1991) in the sense of factors such as inefficient use of available resources, allowing for overlaps and 'doubling', but also in terms of muddling through, losing sight of objectives, sheer confusion on 'the job to be done', and indecisiveness on setting objectives. 'Output' is the central indicator that will help to determine the level of 'responsiveness', and

'resources' – human, financial, time, etc. – are the currency to determine success or failure (Hood, 1991); their provision and application is needed to achieve output.

3.4.2 Procedural quality level: 'legitimacy' of government

The next-order quality level is far less concerned with the question 'what job needs to be done' as it is with 'how to do the job'. The managerial focus on 'purpose' is replaced by 'procedure' as the key issue of good governance. According to this quality level, it is not 'functionality' that distinguishes good government from bad, but aspects such as its 'fairness' in acting upon decisions made by government, in setting in place transparent procedures, in taking responsibility for the conditions under which management has to deliver, and in being accountable to stakeholders and citizens (Hood, 1991; Toonen, 2009).

The administrative values relate to "the pursuit of honesty, fairness and mutuality through the prevention of distortion, inequity, bias and abuse of office" (Hood, 1991:12). With the standard of success set at 'rectitude', the measure of failure becomes 'malversation' (Hood, 1991), which includes matters as wide-ranging as unfair treatment of equal cases, bias in selection mechanisms, lack of transparency of procedures, distortion of information, limited accessibility of government beyond 'the usual suspects', to downright abuse of office, personal enrichment, fraud, and corruption. 'Process' is the central indicator that will help to determine the level of 'legitimacy' that government enjoys, and 'trust' in government as well as 'respect for government' are the yardsticks to determine success or failure (Hood, 1991).

Government can operate on the basis of its state power monopoly, but 'trust in government' can only emerge when the power of government is considered legitimate and government is accepted by its subjects to exercise that power – in other words, when government operates from a basis of state authority (Van Braam, 1986:1920). Conversely, impartiality in the exercise of governmental power is important, as it cements and increases levels of trust in government among its subjects (Rothstein & Teorell, 2005). In view of the increase in multi-actor settings and multi-level policy networks in which government intervention takes shape, how government organises the decision-making process, including building consensus and handling conflicts, is an important indicator of government's 'procedural' qualities and underlying values.

3.4.3 Constitutional quality level: 'resilience' of government

At the third-order quality level, the issue is about the 'resilience' of the institution 'government'. Notwithstanding the continued importance of the core values of 'efficacy' and 'efficiency' at the operational governance level and 'democracy' and 'impartiality' at the procedural governance level, society increasingly demands from government 'reliability, resiliency and decisiveness' (Toonen, 2009:15).

The 'resilience' of government refers to its ability to adapt to changing circumstances, to learn and implement appropriate changes, to endure demanding situations and overcome crises, to keep operating in adverse conditions, and to exude 'trustworthiness' based on society's confidence in government as an institution that can be left in charge of certain matters (Hood, 1991; Toonen, 2009). These 'expectations of security and reliability' have often been the decisive value to attribute tasks and responsibilities to public sector organisations in the first place instead of to private sector ones (Hood, 1991).

With the standard of success set at 'resilience' and 'reliability', the measure of failure becomes 'catastrophe' (Hood, 1991), and any risk to the system, system paralysis, failure, or collapse has to be avoided. This requires systemic or structural factors to be engineered into the organisational design such as back-up systems; maintaining separate, self-standing units; 'inefficient' use of resources, which includes inefficiencies such as allocating more than needed to do the job, double functions; putting in place knowledge management modalities to facilitate institutional learning; and establishing collective resource management programmes for building trust, developing new norms, incorporating a new culture, and helping form groups (Hood, 1991; Toonen, 2009). 'Input' (with 'process') is the central indicator that will help to determine the level of 'resilience' of government, where 'security' and 'survival' are the aspects to determine success or failure (Hood, 1991).

3.4.4 Contextual quality level: 'congruence' of government

A fourth quality dimension that has been added more recently is contextual quality (Toonen, 2015). The key issue of good governance here is 'congruence', which is being able to contextualise government and its actions according to 'time and place', being able to put policy 'in context'. Through this 'congruence', the actions of government resonate. The contextual quality level has particular relevance for issues at the regional tier of government, but in a wider sense than the one meant with 'context-specific' regional innovation policy. The contextual quality level is relevant for regional government as a meta-frame of government's actions in the following sense:

Regional government is a creation of the modern state, but regions existed long before regional government. A region is firstly a territorial demarcation, and its etymological origins have been dated back to the Latin word '*regio*' meaning line, direction, border, area, or territory (Schobben, 2000). A region, hence, refers to a given territory having a single, continuous, and non–intersecting boundary (Schakel, 2009:24). Each region has a unique physical location on the planet and is subject to specific conditions set by climate and nature affecting that particular location ('space-specific'). Government actions have to be meaningful and relate to a region's particular physical location on the planet at this particular moment in time.

Not only can a region be defined in terms of its physical, geological, and climatological characteristics. Regions can also be defined according to their linguistic, historical, and/or cultural identities. Territorial identity, shared history, common language, and established customs and habits, are all elements of a region's cultural heritage giving it its unique identity. "What emerged from empirical work [on innovation systems] was that each country and region differs in its technological and scientific specialisation and displays a different 'innovation culture' [where] the latter is rooted in a unique historical setting" (Kuhlmann & Edler, 2003). This shows that history has a long arm and that some policy choices can only be understood in the wider context of the region's history (the 'path dependency' of policy choices). Government actions have to be relevant and understandable in the wider context of the region's historical journey from the past into today (and continuing into the future).

With the standard of success set at 'congruence', the measure of failure becomes 'incongruence', that is not 'in keeping' with the regional way of doing things or considered outmoded, old-fashioned solutions ill equipped to solve contemporary challenges. 'Timeliness' is the central indicator that will help to determine the level of 'congruence', and

'historic awareness', 'intuition', and an 'ability to understand trends' are the currency by which success or failure are determined.

3.4.5 Compatibility of the levels' underlying administrative values

Although not mutually exclusive, these quality levels of governmental governance represent values that can be complementary as well as conflicting. As Hood puts it, "a central concern with *honesty* and the avoidance of policy distortion in public administration may have different design implications from a central concern with *frugality*; and a central concern with *resilience* may also have different design implications" (Hood, 1991:15).

A nation-state design where regions are constitutionally allocated an autonomous regional tax base, as is the case in federal states, enables regions to finance sub-central public expenditures, engage in contextual policy-making and increase public sector efficiency. However, it might also generate fiscal disparities across jurisdictions, reduce equality in access to public services and/or put in jeopardy the stability of sub-central revenue over time (OECD, 2009).

Table 3.2 gives an overview of the characteristics of the four levels of governmental governance and their quality assessment as presented in section 3.4. Hood's typology (1991) has been modified to accommodate for the fourth governance level, the contextual one.

Table 3.2:	Characteristics of the four levels of governmental governance quality			
Levels of governmental governance:	**Operational**	**Procedural**	**Constitutional**	**Contextual**
Value types:	Sigma *Keep it lean and purposeful*	Theta *Keep it fair and honest*	Lambda *Keep it robust and resilient*	Tau *Keep it aligned to time and place*
Focus:	Purpose ('to get the job done') Functionality	Procedure ('how to do the job') Fairness	Impact ('does it make a difference') Robustness	Context ('does it make sense') Relevance
Standard of success:	Frugality (matching of resources to tasks for given goals)	Rectitude (achievement of fairness, mutuality, proper discharge of duties)	Resilience (achievement of reliability, adaptivity, robustness, sustainability)	Congruence (aligned with the way of doing things, up-to-date)
Standard of failure:	Waste (muddle, confusion, inefficiency)	Malversation (unfairness, bias, abuse of office)	Catastrophe (risk, breakdown, collapse)	Incongruence (*Fremdkörper*, mismatch)
Central indicator:	Output	Process	Input (and Process)	Timeliness (in input, output, process)

Currency of success and failure:	Resources (human, financial, time, etc.)	Trust in and respect for government, entitlements	Security, predictability, survival	Historic awareness, intuition, ability to understand trends

Source: Hood (1991:11), modified.

3.5 Constructing a Public Administration framework of analysis applied to regional innovation policy design

By analysing 'regional government' in terms of four different functions (section 3.3) and assessing each of these functions at four different governance levels (section 3.4), sixteen different government function/governance quality combinations emerge. This section 3.5 will explain the meaning of these sixteen combinations for the design of 'context-specific' regional innovation policy. They are the sixteen theoretical role possibilities for regional government in policy design. Before going into that, the section starts with a few remarks on how to position this two-dimensional matrix within the context of Public Administration research.

From a Public Administration perspective, the first step towards better understanding contextualised policy-making by regional governments in the area of innovation is to view it as a multi-layered phenomenon that requires multiple analytical lenses. In the late 1990s, the Dutch Ministry of the Interior commissioned a study to investigate the impact of local government reorganisation on the quality of local government. Chaired by Theo Toonen the research team delivered a report that – in order to answer the question of the Ministry – operationalised 'quality' as a multi-dimensional concept (Toonen et al., 1998). The four functions of local government were assessed according to three different quality dimensions resulting in a 'quality matrix'. A heuristic tool was born, and it has been applied and operationalised in different ways since (Abma, 2012), including in this study. The theoretical notions that underpin the function description of local government and government governance quality are diverse and have multiple origins. Although it is beyond the scope of this study to discuss these in detail, the following is worth mentioning.

The functions of local government are closely linked to the birth and development of the nation-state construct in post-Napoleonic Europe, the historical dynamics of Europe's societies and the political transformations over time (Acemoglu & Robinson, 2013). In Europe, different state traditions co-exist, each one impacting the way in which the purpose of government in society is viewed and what is considered 'good' versus 'bad' governance. Hood (1991) mentions the existence of 'historically distinct approaches to public administration' in Europe: German state-led economic development rooted in cameralism versus Anglo-Saxon liberal economic development rooted in utilitarianism.

In terms of conceptualising 'quality' of government and the art of governing, two scholars deserve particular mentioning in the context of this study. Ostrom explained why public decision-making processes are far more complex than the rational actor driven economic models assume. She pointed out that it is important – analytically – to understand that when government governs, 'three worlds of action' come together and interact in any given situation (Kiser & Ostrom, 2000)[12]. Action at one level does not take place independently

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[12] Kiser & Ostrom (2000:76-77) explain as follows: The first world of action is the operational level where "individuals are authorized to take a wide variety of actions at this level without prior agreement with other individuals." The second is the world of collective decisions that "are made by officials to determine, enforce,

of another level, it is interlinked, which constrains collective action (Kiser & Ostrom, 2000). She also took over where Garrett Hardin's work on environmental and nature conservation policy had left off by researching – both conceptually as empirically – what constitutes good governance of Common Pool Resources (Hardin, 1968; Ostrom, 1990). In 2009, she received the Nobel Prize in Economics (shared with Williamson) "for her analysis of economic governance, especially the commons". [13]

Hood presented 'quality' as a multidimensional concept driven by different types of values – which he called sigma, theta, and lambda-types of values – that determine how 'success' versus 'failure' of government intervention are positioned (Hood, 1991). What complicates matters is that in the interaction of these three levels of governance in any given situation "different and sometimes conflicting criteria for good governance apply" (Toonen, 2009). It is the job of government to find a workable solution for the government intervention envisaged, marrying different sets of administrative values. The 'quality matrix' developed by Toonen et al. (1998) and applied in this study to regional government has been influenced by the work of these authors. The 'quality matrix' work itself triggered a series of research commissioned by Dutch local governments in the first decade of the 21st century referred to as '*bestuurskracht monitor*' research (which can be translated as 'governmental governance monitor') (Abma, 2012). Although these sets of administrative values are not mutually exclusive, for the purpose of this study each governance level is associated with one dominant administrative value.

Combining these four functions of regional government (*'what'*) with the four governance levels at which the execution of these functions can take place and be assessed (*'how'*) results in sixteen theoretical role possibilities for regional government in policy design. The characteristics of each role are described hereafter in sections 3.5.1-3.5.4. The Public Administration framework of analysis is presented in Table 3.3.

3.5.1 Regional government as the embodiment of the 'innovation community'

According to the first function, the purpose of regional government is in expressing the preferences of the 'community'. Those regions that have been considered successful regional innovation systems (such as Baden-Württemberg, Lombardia, Rhône-Alpes, and Catalonia in Europe, Silicon Valley and the Greater Boston Area in the U.S.) have in common that they represent an 'innovation community'. Notwithstanding the institutional approach to regions in the Regional Innovation Systems literature, regions are above all communities of people. In his book *The Rise of the Creative Class*, Florida (2002) argues that 'place matters' because of community-specific characteristics that nurture an open-minded culture of creativity which in turn attracts creative, talented people, which in turn favours innovations, which in turn reinforces the creative, innovation-inducing characteristics of the community. The statistical work done by Florida and his team empirically underscores the importance of 'community' for innovation; something that policy-makers tend to overlook when copying policy successes from elsewhere.

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continue or alter actions authorized within institutional arrangements. (…) collective decisions are enforceable against nonconforming individuals." The third is the world of constitutional decision-making. "Constitutional decisions are collective choices about rules governing future collective decisions to authorize actions." They are "decisions about decision rules." Each level of decision-making is linked to the next level.

[13] She still is, to date, the only woman having been awarded the Nobel Prize in Economics (the official name is the 'Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel') since its first time in 1969.

Regional government can be instrumental in developing the region's innovation system into a genuine 'innovation community'. How well regional government performs this function can be assessed at different levels of governmental governance quality, resulting in the following four regional government roles.

3.5.1.1 As 'community-driven organiser'

At the operational level, regional government is responsive to the preferences of 'its' people (these preference are not necessarily synonymous with the region's pressing innovation problems); engages in community building efforts such as 'branding' the region as an innovation community;[14] attracting knowledge workers and knowledge organisations ('brain gain' as opposed to 'brain drain'); performs activities that infuse local pride and strengthen the communal sense of belonging to this particular innovation community.

3.5.1.2 As 'innovation community-builder'

At the procedural level, regional government derives authority from satisfying the community's preferences and is trusted as 'one of us'; involves civil society in innovation-relevant decision-making processes; implements community management programmes; handles local power monopolies; sets in place formal rules and other procedures to reduce 'political capturing'; undertakes actions to reduce bias and clientelism when addressing innovation needs of the region.

3.5.1.3 As 'regional interest establisher'

At the constitutional level, regional government manages to establish the 'regional interest', which reinforces its 'trustworthiness' in the region; regional government gains a reputation (within, but also beyond the region) as a player that 'makes it happen for its people'; the involvement of the community matters to regional government for which structural modalities are foreseen.

3.5.1.4 As 'regional history connector'

At the contextual level, the region displays a shared historical awareness, and its people are proud of the region's history. The region possesses a strong regional identity, and 'stories' are shared and passed down to the next generation. Regional government keeps the regional identity alive by honouring the region's cultural heritage through social-cultural activities such as funding festivals, opening museums, naming streets after famous residents 'from the region', etc. There is a distinct historic-regional identity logic to government actions, including in other policy areas. Policy-making is perceived to be about current problems for which a contemporary solution has to be found while simultaneously establishing a connection with

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[14] In 1999, the regional government of Baden-Württemberg – Germany's top innovative region employing one fifth of all German R&D staff – launched a 'regional branding' campaign under the slogan *'Wir können alles. Außer Hochdeutsch.'* ['We can do anything. Except speak standard German.']. In 2017, it was voted the most successful regional campaign in Germany of the past twenty years, highlighting in a concise and humoristic manner global top performance alongside a strong regional identity (https://s-f.com/en/arbeiten/case/wir-koennen-alles-ausser-hochdeutsch/ accessed on 05/12/2018).

the region's past; the solution has to make sense from the region's history and identity viewpoint.

3.5.2 Regional government as a manager of resources 'to deliver knowledge policies and innovation support services'

As outlined earlier, the second function of regional government is to provide public goods and services. Innovation happens through the generation, diffusion, application, and exploitation of knowledge. Knowledge shares 'public good' characteristics, which provide a case for government intervention. The market failure rationale of government intervention specifies non-excludability (or at least imperfect appropriability) and non-rivalry in the use of knowledge, combined with other characteristics such as path dependency, uncertainty of 'useful' results, and risks of 'wasted' investments (Wolfson, 1988; Muldur et al., 2006).

Regional government is expected to intervene and deliver policies that promote 'knowledge' in the broadest sense (technology transfer, innovation support, prototype funding, teaching and training courses, SME-oriented schemes, etc.). From an innovation systems point of view, whatever policy instrument is chosen from the innovation toolbox, government intervention is expected to be 'system specific' in its orientation. According to this function, regional government's main task is to help the regional innovation system to 'develop, diffuse and utilise innovations' (Carlsson & Stankiewicz, 1995). There is no such thing as a 'one-size-fits-all' remedy; actions customised to address the regional innovation system's specific innovation deficiencies are what is needed.

Enhancing the functioning and performance of a regional innovation system is the dominant view on the purpose of regional government in the Regional Innovation Systems literature. As described earlier, how well regional government performs this function can be assessed at different quality levels of governmental governance, resulting in the following four regional government roles.

3.5.2.1 As 'responsive problem-solver'

At the operational level, regional government is responsive to the innovation problems of the region and has put 'customised' solutions in place; these solutions are problem-driven rather than institution-driven ('problems looking for solutions' rather than 'solutions in search of problems'); regional innovation policies, programmes, and services are effective and resources are managed efficiently; when regional government is 'under-resourced', creative solutions are sought.

3.5.2.2 As 'solution-enabler'

At the procedural level, regional government puts in place the conditions needed to allow for the adequate performance of the tasks at the operational, managerial level. This includes conditions facilitating the collection of factual evidence on the current innovation status of the region and other ways to support evidence-based decision-making, involving innovation-relevant stakeholders in the decision-making process, building consensus on policy options, handling conflicts and compensating losers demonstrating regional leadership, and follow-through of the preferred option into implementation.

3.5.2.3 As 'system weather-proofer'

At the constitutional level, regional government has managed to create the conditions for a resilient, adaptable, sustainable regional innovation system capable of handling change (system has been made 'weatherproof'); continuous learning and renewal are programmed in as are functions of strategic thinking and planning; the region has been made fit for future challenges; the regional innovation system is considered 'good/best practice' and serves as a benchmark for other regions.

3.5.2.4 As 'regional-needs-first proponent'

At the contextual level, regional government understands the region's needs, wishes, and desires well from a historic perspective. The region's territorial or functional government organisation applies a strong regional logic in the execution of its mandate. In general, there tends to be a regional-needs-first logic to government actions, a 'regional pragmatism' in dealing with formal mandates, organisational missions, and service or policy delivery to advance regional needs first.

3.5.3 Regional government as a distinct 'political-administrative entity' within a multi-level innovation system

Territorial sub-divisions of power clarify the type of power ('political' versus 'administrative') and the amount of power ('self-rule' versus 'shared rule') at the disposal of regional government. They also position regional government as a 'state' actor in the region. As a 'political-administrative entity' in its own right, regional government is best positioned and equipped to 'connect the unconnected' in the region and beyond, being an intermediate government part of a larger framework of government tiers.

A regional innovation system does not operate in isolation, but is part of a larger, multi-layered system of innovation. Innovation systems are 'open' systems, linked to and affected by actors and factors 'outside' the boundaries of the system in question. Regional government can take on to ensure the 'connection' of the region with other innovation systems, with different innovation networks (including participating in EU programmes). Regional government can facilitate tapping into knowledge sources outside the region and enable learning from good practices elsewhere.

Regions in federal government systems are assumed to be better at 'interconnecting' the region than those in unitary government systems, as 'multi-level governance' is their daily bread and butter; it is very much a key feature of that government system. Regional government can be instrumental in making complex systems of governance work in favour of the region's innovation system.

How well regional government performs this function can be assessed at four different governance levels, resulting in the following four regional government roles.

3.5.3.1 As 'relations-handler'

At the operational level, regional government has foreseen in tasks including those facilitating the management of intergovernmental relations between regional and central government as well as EU relations, those dealing with the management of public affairs and regional

marketing, those concerned with data gathering and data analysis for regional benchmarking purposes, and those handling relations and other forms of diplomacy with major innovation-relevant stakeholders in the region.

3.5.3.2 As 'pro-active networker'

At the procedural level, regional government puts in place the conditions needed to allow for the adequate performance of the tasks at the operational, managerial level (instead of paying mere lip service). Regional government engages in networking activities itself, but also sees it as its job to help other regional stakeholders get connected with relevant parties. Besides 'enabling', and 'fixing', another approach can be for regional government to 'steer' all networking activities in a more closed, centralised, and controlling fashion.

3.5.3.3 As 'competent co-producer'

At the constitutional level, regional government has managed to establish itself as a respected cooperation partner, with actors in the region, as well as with national government (and beyond). Regional government has succeeded in making the most of the constitutional and institutional possibilities to solve region-specific innovation needs in partnership with other government tiers ('co-production'). Regional government is seen as competent by both local firms and multinational corporations and is trusted as a partner to do business with. Regional government is acknowledged as 'good/best practice' in multi-level innovation governance, able to build consensus and solve conflicts.

3.5.3.4 As 'regional power builder'

At the contextual level, regional government understands the region's 'position' within the nation-state construct and has been able to use (sometimes to the point of exploiting) this position to achieve objectives important to the region. Regional government has been successful in making others outside the region (national government included) 'see the world' as the region sees it and co-produce solutions that empowers the region. Redefining and reinforcing the power base of the region can ultimately serve to leave the nation-state construct by becoming independent and relying on the region's 'innovation power' to sustain itself.

3.5.4 Regional government as an 'architect of innovation-led structural change'

The fourth and final function of regional government centres on its ability to induce and/or manage change. The regional government tier has increased in importance in the post-World War II era as many nation-states have become more regionalised due to developments outlined earlier. Innovation policy is the latest addition to modern government's portfolios. The regional level is considered the jurisdictional scale at which this policy is delivered best. Regional government is considered the actor most capable to shape this meso-level of innovation governance. Changes in jurisdictional responsibilities at the regional level have to be managed by regional government, side effects included, and its administration has to be (re)organised, staffed, and trained to perform these new functions. In addition, innovation policy itself brings about structural change in the region.

How well regional government performs this function can be assessed at four levels of governance quality, resulting in the following four regional government roles.

3.5.4.1 As 'change manager'

Starting with the operational, managerial level, regional government has vectored in functions that will help in performing new change-induced tasks as well as in (re)acting upon and reassessing given objectives in case of new developments. It concerns functions dealing with strategic thinking and planning, monitoring and evaluation, evidence-based learning, HR and change management, and the like.

3.5.4.2 As 'agent of change'

At the procedural level, regional government demonstrates political leadership in adverse situations; involves relevant stakeholders and others to facilitate change processes; interacts with other government tiers to make the strategic vision of the region a reality; designs new rules and procedures if deemed beneficial for change processes; makes the most of rules and procedures of other government tiers to advance the region's future (exemplified by successfully obtaining national and EU subsidies).

3.5.4.3 As 'innovation visionary'

At the constitutional level, regional government's actions are associated with the transformation of the regional innovation system fit for the future; regional government has a vision of the future version of the region; is respected and praised for its strategic approach and decisiveness; other government tiers ask the regional government for advice; regional government is considered to be at the forefront of innovation promotion. To prevent complacency, regional government has vectored in functions for self-analysis and self-criticism, such as data observatory to monitor regional innovation performance, regular regional innovation reviews by external experts, and the like.

3.5.4.4 As 'regional futurist'

At the contextual level, the focus is on bringing the region's past into the future as a way to preserve the region's history, not only by being open to world, but be being daring and experimental. The focus is on translating the region's past into a brave new future vision of the region which strikes one as familiar at the same time. Regional government has an ability to intuitively understand societal trends and adapt them to the regional specificities. Regional government is pro-actively engaged in defining the region's future and making it happen experimenting with new, unprecedented ways (to the region in question) of involving stakeholders and citizens alike.

The above has described the four functions of regional government that can be performed at four different governance levels: operational, procedural, constitutional, and contextual. The 4x4 government function/governance level combinations generate sixteen possible regional government roles (which equals the 16 matrix cells in the Public Administration framework of analysis). Table 3.3 below depicts the sixteen theoretically possible roles of regional

government in a regional innovation system. This heuristic-theoretical framework will serve as the tool to establish empirically what role(s) regional governments in the six cases of this study perform when designing 'context-specific' regional innovation policy. This will be done in chapter 6.

Table 3.3:	Public Administration framework of analysis of the role of regional government in regional innovation policy design			
Levels of governance:	**Functions of regional government:**			
	Embodies the regional community	Provides public services/policies	Is self-standing unit in a larger system	Acts as an agent of change
Operational	*'community-driven organiser'*	*'responsive problem-solver'*	*'relations-handler'*	*'change manager'*
Procedural	*'innovation community-builder'*	*'solution-enabler'*	*'pro-active networker'*	*'agent of change'*
Constitutional	*'regional interest establisher'*	*'system weather-proofer'*	*'competent co-producer'*	*'innovation visionary'*
Contextual	*'regional history connector'*	*'regional-needs-first proponent'*	*'regional power builder'*	*'regional futurist'*

3.6 Summary

In line with Public Administration theory, this chapter distinguished between four different functions of regional government (Toonen et al., 1998): 1) representing the regional community and establishing the 'regional interest' vis-à-vis innovation; 2) providing public services to help the regional innovation system to 'develop, diffuse, and utilise innovations' (Carlsson & Stankiwiecz, 1991); 3) being part of a larger, multi-level innovation system connecting the region to other sectoral, national, and global innovation systems; and 4) acting as an 'agent of change' or coping with crisis as institution of 'last resort'.

How well regional government succeeds in performing these functions – in short what makes up 'competent' regional government – can be assessed in accordance with four 'quality levels of governmental governance' (Toonen et al., 1998; Toonen & Staatsen, 2004). The four governance levels and their corresponding administrative values have been described in this chapter. These are: 1) operational level, which is about 'responsiveness' – the view on regional government in the RIS literature; 2) procedural level, which is about 'legitimacy' – the way in which regional government operates; 3) constitutional level, which is about 'resilience' – regional government creates the right conditions for a robust, adaptable, sustainable regional innovation system capable of handling change; and 4) contextual level, where the key issue of good governance is 'congruence', that is being able to contextualise government's actions in place and time.

The four functions of regional government and the four quality levels at which the execution of these functions can be assessed have been applied to regional innovation policy. The resulting Public Administration matrix presented in this chapter defines sixteen

theoretically possible regional government roles in the design of a 'context-specific' regional innovation policy. Before applying this theoretical matrix to the empirical world of the study's region cases, the next chapter will first describe the research design of the study.

4

Research design of the study

"Inanimate objects can be classified scientifically into three major categories:
those that don't work, those that break down and those that get lost"

Russell Baker (1925-2019), American author, Pulitzer Prize winner

4.1 Introduction

The research method chosen for this study is the case study, descriptive in orientation, and consisting of multiple cases. In this chapter, the research design of the study is explained, the research method and data gathering are described, the study's conceptual model is presented, and its core concepts are defined, and the way in which the study's research question is operationalised in indicators for data analysis purposes is outlined.

4.2 Multiple-case study research

In order to investigate to what extent, and how, regional government matters for the design of 'context-specific' regional innovation policy, this study employs a case study research method. Yin (2003) defines a case study research method as "an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident." This research method was chosen over other qualitative research methods because the purpose of this study is to get a better understanding of how regional government can help foster regional innovation. Given that the regional context of innovation matters a great deal for what constitutes effective government intervention, a case study research method was considered most appropriate.

In order to compare different contexts – that is regions with different economic characteristics each generating its own set of innovation problems specific to the region's innovation system – this case study research consists of multiple cases. Six European regions representing three regional innovation system types have been selected in view of conducting a cross-regional comparison. The research method of this study can, therefore, be labelled a multiple-case or comparative case study (Yin, 2003; Stake, 2006).

The study also wants to explore whether regional governments in federal government systems are better at fostering regional innovation than regional governments in centralised unitary government systems that have far less authoritative decision-making power. 'Better' here is to be understood as 'better at designing a contextualised policy' as opposed to a one-size-fits-all approach or a copy-and-paste imitation of policy measures seen elsewhere. That is why the six selected regions represent regions in Germany and the United Kingdom, two countries often portrayed as being at either end of the regional autonomy continuum.

4.3 Reasons for choosing a descriptive case study type

Yin (2003) distinguishes between different types of case studies; each of these types can be based on single or multiple cases. Case studies can be exploratory, descriptive, and explanatory, depending on the purpose they serve. The case study design of this study is a descriptive case study type. The reasons for this choice are as follows.

A descriptive case study type "presents a complete description of a phenomenon within its context" (Yin, 2003), and this description has a theoretical underpinning that guides the investigator on what (of the phenomenon) it is that needs to be described (Berg, 2004). The theoretical underpinning does not serve to determine cause-effect relationships, but to establish the criteria that define the scope and depth of the case being described (Yin, 2003). In order to define what makes up a 'context-specific' regional innovation policy, this study looks into Regional Innovation Systems theory. The 'prototypology' developed by Isaksen

(2001), Nauwelaers & Wintjes (2003), and Tödtling & Trippl (2005) is used to define the regional innovation *problématique* in three ideal region types and to match these with idealised innovation policy answers. This theoretical framework serves to guide the expectations of what theory predicts one is likely to find as 'context-specific' regional innovation policy in the six regional cases. 'Pattern-matching' is a common data analysis technique within descriptive case studies and serves to compare "an empirically based pattern with a predicted one" (Trochim, 1989). This technique was also employed in this study.

Although this study is not about testing or developing hypotheses and can, therefore, neither be labelled 'explanatory' nor 'exploratory', its descriptive orientation does serve an exploratory purpose. As stated above, the descriptive purpose is to find out – from a guiding theoretical framework offered by the Regional Innovation Systems school of thought – to what extent regional innovation policy in the study's six RITTS regions matches the theoretically predicted contextualisation. Based on the finding that there is a mismatch, the second part of the study moves from asking 'what' is 'context-specific' regional innovation policy to investigating the 'how'. It sets out to explore how the design of this policy in the study's six RITTS regions came about. Opening up the black box of policy-making is considered to shed more light on the type of 'policy discussion' that took place and the type of role regional government played in shaping that discussion.

Of the four functions distinguished in the literature, regional government in Germany is most often associated with the function of being a distinct 'political-administrative entity' within a larger government system (*'Politikverflechtung'*, Scharpf, 1999). Regional government in the United Kingdom, on the other hand, is most strongly associated with the function of being a manager of resources 'to deliver public goods and services'. It is beyond the scope of this study to investigate whether the formal administrative position of regional government within the nation-state favours certain functions over others and what the impact is on contextualised policy-making. However, the study is a first exploration in this direction.

4.4 The unit of analysis

The need for 'translating' a theoretical concern or abstract research question into something that is empirically observable for which data can be collected is perceived as being problematic in the case study research method. As Yin (2003) points out "because phenomenon and context are not always distinguishable in real-life situations (…) there will be many more variables of interest than data points." How then to narrow down the phenomenon under investigation and develop a "sufficiently operational set of measures" (Yin, 2003)?

In this study, the unit of analysis is regional government, but in order to operationalise this actor the focus shifts to how this actor behaves and decides upon regional innovation policy in the policy-making process. The study looks at six regions that participated in a European programme called RITTS in the second half of the 1990s. RITTS aimed at reinforcing a region's policy capacity in the area of innovation and technology transfer. Together with its sister programme RTP/RIS, they are the predecessors of the smart specialisation strategy underpinning current European regional policy. Observing 'who' decides 'what', 'when', 'how' and if possible 'why' during the three stages of the policy cycle in a RITTS project is assumed to generate a picture of what role regional government actually plays as opposed to deducing these roles from formal competencies, official missions, and task descriptions. Investigating how 'context-specific' regional innovation policy comes about (or not) is the approach taken in this study to reveal how regional government in the six European regions of this study

matters for regional innovation. Please note that this study covers what happened *during* the lifetime of a RITTS project. What happened to the proposed regional innovation policy *after* the RITTS project had finished is outside the remit of this study.

4.5 Case selection

Methodological as well as practical criteria guided the selection of the six case studies. The nature of the region's innovation *problématique* and the regional government's administrative position within the national government system were two guiding methodological criteria.

Concerning the first criterion, the literature research had resulted in a decision to use Tödtling and Trippl's (2005) typology of regional innovation systems, distinguishing between peripheral, old industrial and metropolitan regions. Concerning the second criterion, each of the three region types had to be located in countries representing two contrasting types of government systems in terms of regional autonomy: federal and unitary. The decision to select RITTS regions from Germany and the United Kingdom is because of all European countries they are considered opposites on the regional autonomy continuum (Hooghe et al., 2010).

Of the 72 regions in total that had participated in the three Calls for Proposals[15] between 1994 and 2000, ten of them were German regions and nine of them were British ones. The sub-division over region type is presented in Table 4.1.

Table 4.1: Participation of German and British regions in RITTS between 1994-2000		
	Germany	United Kingdom
Total number of regions participating:	10	9
Of which:		
Peripheral region	3	1
Old industrial region	1	4
Metropolitan region	3	1
Other region type	3	3

The practical criteria that narrowed down the selection of case studies related to the quantity, quality, language, and accessibility of the RITTS records and other RITTS-related documents held at the European Commission archives. For the purpose of the study, the minimum requirement in terms of regional coverage had to be one German and one British region per region type. The six case studies also had to incorporate both single-purpose, mission-mandated regional government organisations as well as general-purpose, elected, territorial ones among the organisations in charge of the RITTS policy design process.

The six RITTS regions that met these criteria are shown Table 4.2. They participated in the RITTS programme in the period between 1994 and 1998 (resulting from the first and second Call for Proposals).

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[15] The first Call was published in 1994 covering period 1994-1996 and resulted in 22 regions participating. The second Call was published in 1995 covering period 1996-1998 and resulted in 21 regions participating. The third Call was published in 1997 covering period 1998-2000 and resulted in 29 regions participating.

Table 4.2: Six selected region cases		
	Degree of regional autonomy	
	High, Germany	Low, United Kingdom
Regional innovation system		
Peripheral region	RITTS Neubrandenburg	RITTS Highlands and Islands
Old industrial region	RITTS Aachen	RITTS North East of England
Metropolitan region	RITTS Hamburg	RITTS South Coast Metropole

In many cases, there is an overlap with geographical characteristics, but in this study the connotation 'peripheral' or 'old industrial' or 'metropolitan' refers in first instance to the characteristics of the region's innovation system as explained in chapter 2. That is why the RITTS Aachen region, for example, or RITTS North East of England are not labelled 'peripheral' despite the fact that some might argue that their geographical location in their respective home countries is peripheral. They are labelled 'old industrial' because of the characteristics of their regional innovation system. This study is interested in understanding how these characteristics are captured in a 'context-specific' regional innovation policy.

4.6 Conceptual model

4.6.1 Variables

A conceptual model is the "theoretical framework of thought of the researcher" (Segers, 1983) that summarises how the research problem is positioned. A conceptual model consists of variables, or core concepts, and relationships between those variables. The direction of the relationship positions some variables as independent (the explaining factors, *explicans*) and others as dependent variables (the phenomenon to be explained, *explicandum*) in the model.

In the theoretical underpinning of this study, 'context-specific' regional innovation policy features as the dependent variable and regional innovation *problématique* as the independent variable. Put differently, 'context-specific' regional innovation policy can be explained based on the specific nature of the innovation obstacles a regional innovation system faces. In this study, three regional innovation system types are distinguished, each generating a specific regional innovation *problématique*. In idealised form this means that for peripheral regions the dominant innovation problem is 'organisational thinness', for old industrial regions it is 'lock-in', and for metropolitan regions it is 'fragmentation'. The 'context-specific' policy solution would be any measure undertaken by regional government aimed at tackling 'organisational thinness', 'lock-in', and 'fragmentation', respectively. This results in the following conceptual model:
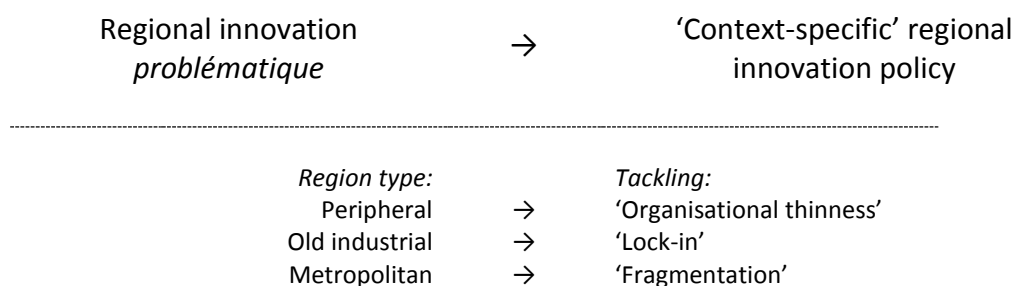
Regional innovation *problématique*	→	'Context-specific' regional innovation policy

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	Region type:		*Tackling:*
	Peripheral	→	'Organisational thinness'
	Old industrial	→	'Lock-in'
	Metropolitan	→	'Fragmentation'

Contextualised policy-making in the area of innovation is expected to be similar for regions sharing a similar innovation *problématique*. This is investigated in chapter 5 for the six region cases in this study. In order to understand better why regions with a similar innovation *problématique* come up with different policy responses, the policy-making process leading up to the final policy decision requires closer investigation. This is undertaken in chapter 6 for the study's six region cases. The policy-making process is considered to intervene in the effect that the independent variable (the regional innovation *problématique*) has on the dependent variable (the final output of the policy-making process). This results in the following modification of the conceptual model:

Regional innovation   →   Policy-making   →   'Context-specific' regional
problématique   process   innovation policy
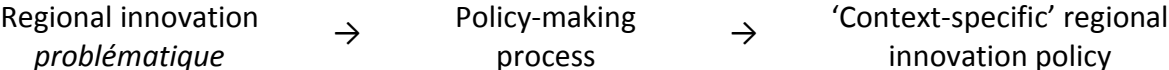
Should the policies of regions with a similar innovation *problématique* differ from the theoretically predicted policy solutions, then it is expected that this difference will be related to the differences in authoritative decision-making power of the regions. Regional governments with authoritative decision-making power, such as those in federal government systems, are assumed better equipped to design a contextualised policy than regional governments in centralised unitary government systems that enjoy far less regional autonomy. This results in the following modification of the conceptual model:

Regional innovation   →   Policy-making   →   'Context-specific' regional
problématique   process   innovation policy

↑

Administrative position of
regional government

This conceptual model is a simplified representation of a far more complex phenomenon; more variables can easily be added as well as more relationships in different directions. In addition, factors beyond regional government control and outside the scope of the regional innovation system impact upon policy design. This is not the purpose it serves. This study is not about independent variables and establishing their causal relationship with the dependent variable. The conceptual model and its propositions serve to bound the research, focus the data collection, and guide the pattern search. The conceptual model serves to clarify the structure of reasoning in this study and the organisation of the chapters to do so.

4.6.2 Core concepts

The case studies are descriptive in nature, aimed at understanding better the role of regional government in designing contextualised policy. The unit of analysis is regional government, and the focus of the study is on how this actor behaves and decides upon regional innovation in the policy process. Based on the description in chapters 2 and 3, Table 4.3 provides a schematic overview of the definition of the conceptual model's core concepts and its translation ('operationalisation') in the RITTS context.

Table 4.3:	Operationalisation of the study's conceptual model	
Core concept	**Definition**	**Operational definition**
Regional innovation *problématique*	The occurrence of systemic failures in one or both sub-systems of a regional innovation system and/or in the interaction between these two sub-systems. The sub-systems consist of: (1) a knowledge application and exploitation sub-system, consisting of 'knowledge users'; and (2) a knowledge generation and diffusion sub-system, consisting of 'knowledge creators'. The use of the word '*problématique'* is deliberate to highlight that innovation problems at enterprise level do not occur in isolation. The term regional innovation '*problématique*' used in this study refers to particular system deficiencies linked to a particular regional innovation system.	The definition of the regional innovation *problématique* as described in the Stage 1 report on the basis of the data gathered for the demand-side and supply-side analysis and as agreed upon by the regional stakeholders represented in the RITTS Steering Committee. Within the context of RITTS, the 'demand-side' refers to the region's 'knowledge users' (such as enterprises) and the 'supply-side' refers to the region's 'knowledge creators' (such as universities and research institutes). The latter also consists of 'technology transfer organisations' and 'innovation support organisations' being intermediary organisations set up to bridge the gap between demand and supply.
Regional government	A sub-national, regional tier of national government to which administrative tasks and/or political power have been allocated and which are executed within a given territory of that nation-state (Van Braam, 1986).	The RITTS project leader. The organisation of the RITTS project leader can be a territorial, general-purpose regional government organisation or a functional, single-purpose regional government organisation. The latter is here an organisation with a government mandate in the area of regional development or regionalised technology transfer.
Administrative position of regional government	A region's administrative position is the managerial room of manoeuvre of regional government within the formal spatial distribution of power in a government system. The managerial room of manoeuvre can result from 'political' or 'administrative' decentralisation. In the case of 'political' decentralisation, 'political' authority is devolved – either constitutionally (as in Germany for example) or by government decision (as in the United Kingdom for example) – to other sub-central authorities who are downwardly accountable to regional voters (Hooghe et al., 2010). 'Administrative' decentralisation refers to those instances where 'bureaucratic' authority (this is administrative power involving mainly administrative tasks and/or managerial responsibilities) is	Within the context of RITTS, the project leader's organisation occupies a formal administrative position within the larger government system either through devolution of power from the centre, decentralisation of administrative power from the centre, or through a thematic government mandate given by the centre.

	delegated from central government administration to lower tiers of central government in the region or to other sub-central authorities who are upwardly accountable to the central government (Ribot, 2002, quoted in Yuliani, 2004).	
'Context-specific' regional innovation policy	A course of purposive action that is undertaken by a regional government organisation in order to strengthen firms' ability to innovate through measures that address the regional innovation system deficiencies (the dominant regional innovation *problématique*).	The 'context-specific' regional innovation policy is the policy strategy and/or policy measures as agreed by the regional stakeholders represented in the RITTS Steering Committee and as reported to the European Commission in the final RITTS report (Stage 3).
Innovation	Innovation is seen as an interactive learning process that converts 'knowledge and ideas' into 'something commercially successful'. Innovation is the process converting knowledge – both R&D-based as non-technological – into industrial and commercial success. It refers to both the process of innovating as the output of this process, the innovation itself. The latter can be a new or improved product, process, or service that is successfully introduced on the market generating income (or that is successfully used within a production process) (OECD, 1994).	Within the context of RITTS, 'innovation' refers to the process of innovating as to the output of this process, the innovation itself, where innovation has to be 'new' to the company.

4.6.3 The policy cycle model applied to RITTS

This study's definition of the policy process is in line with the classical view on the policy process where the policy process is divided into sequentially linked activities that take place in discrete stages. Credit for simplifying the real-life complexity of public policy-making into this so-called 'policy cycle' goes to Harald Lasswell (1956). Although later authors distinguished fewer policy stages in a drive towards greater simplicity, the type of activities considered to make up the policy process remained more or less the same. At least the following types of activities have been recognised in the public policy literature as constituting the core elements of the policy process (Howlett & Ramesh, 2003):
1) Recognising the problem – as being of public concern and in need of government intervention – and defining the problem ('positioning');
2) Proposing possible solutions, proposing alternative options to achieve the same objective;
3) Choosing one solution, deciding on the solution that will be implemented, deciding on the implementation modalities;
4) Putting the solution into effect, implementing the solution;
5) Monitoring the results and evaluating the effects of the intervention.

In the classical approach, each of these activities is assumed to take place in a separate stage of the policy cycle preceding the next stage in a linear way (Howlett & Ramesh, 2003):
1)   Agenda-setting;
2)   Policy formulation;
3)   Policy decision-making;
4)   Policy implementation;
5)   Policy evaluation.

The policy cycle model is based on the assumption that actors behave rationally. Howlett and Ramesh (2003:13) refer to the "logic of applied problem-solving" as being the 'operative principle' of the policy circle notion. In other words, the purpose of the policy process is assumed to put in place the best possible solution of the problem under consideration. Actors in the policy process are assumed to behave rationally, having the 'true' problem definition at the beginning of the policy cycle is considered a necessary condition to generate the correct solution at the end of the policy design process.

This rational, monocentric view of the policy process is also reflected in the architecture of RITTS. A RITTS project is divided up in sequentially linked activities that take place in separate stages. The European Commission's original idea was 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 (activity #1) and a Stage 2 concerned with policy formulation, policy decision, and proposing the modalities of the policy implementation and policy monitoring and evaluation (activity #2-5). 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 and/or bring the policy formulation (activity #2) forward to Stage 1. Although 'the three-staged RITTS policy process' originally referred to the Stages 0, 1, and 2 in the RITTS programme, for the purpose of this study (and in view of the RITTS practice adding a 3rd Stage to cope with the many mandatory tasks in a RITTS project), when reference is made to 'the three-staged RITTS policy process' in this study Stages 1, 2, and 3 are meant. Table 4.4 is a schematic overview of the operationalisation of the policy cycle model and its translation in the RITTS context.

Table 4.4:	Operationalisation of the policy cycle model in the RITTS context	
Core concept	**Definition**	**Operational definition**
Policy-making process, decision-making process, policy process, policy cycle (in this study, these terms are used interchangeably)	Process of public decision-making to formulate a policy response to a problem considered of public concern. In accordance with the classical view, the policy process is viewed as divided up in sequentially linked activities taking place in discrete stages. The final output of a policy process is a policy. Policy is a course of purposive action undertaken by a government or semi-government actor.	Process of defining a context-specific policy response to the region's innovation *problématique* as defined in the RITTS Stage 1 report. The policy process is divided up in sequentially linked activities that take place in three Stages. The final output of the RITTS project is a contextualised regional innovation strategy agreed with the region's key stakeholders and ready to be implemented, as defined in the RITTS Final report.

Stage 1 agenda-setting	The stage where the problem is recognised – as being of public concern and in need of government intervention – and the problem is defined ('positioning').	Activity undertaken in Stage 1 of a RITTS project consisting of gathering and analysing data to define the regional innovation *problématique*.
Stage 2 policy formulation	The stage where possible solutions are proposed, where alternative options are proposed to achieve the same objective.	Activity undertaken in either Stage 1 or Stage 2 of a RITTS project consisting of preparing different options to address the problem definition given in Stage 1.
Stage 3 policy decision-making	The stage where one solution is chosen, where a decision is made on the solution that will be implemented, where a decision is made on the implementation modalities.	Activity undertaken in Stage 2 of a RITTS project consisting of obtaining regional consensus on the preferred policy response. The final policy decision can be made in Stage 2 or Stage 3 (caveat: depending on the organisation of the RITTS project and the way in which consensus is achieved).
Stage 4 policy implementation	The stage where the solution is put into effect, where the solution is implemented.	Activity undertaken in Stage 2 or Stage 3 of a RITTS project (same caveat) consisting of preparing the modalities for implementing the chosen policy option in the post-RITTS period.
Stage 5 policy evaluation	The stage where the results are monitored and the effects of the intervention are evaluated.	Activity undertaken in Stage 2 or Stage 3 of a RITTS project (same caveat) consisting of preparing the modalities for monitoring and evaluation the chosen policy option in the post-RITTS period.

In order to establish what role(s) regional government plays in the policy process aimed at designing a contextualised policy, data are collected on 'who' decides 'what', 'when', 'how', and if possible 'why' during the three stages of a RITTS project. The policy process is perceived as a 'policy discussion'; this discussion can take place at one or multiple governmental governance levels and can vary per stage. It is not the formal competencies bestowed upon regional government, but the 'policy discussion' in each of the six RITTS cases in this study that serves as the basis for analysis and interpretation from which the key role(s) of regional government are deduced. Investigating how 'context-specific' regional innovation policy comes about is the approach taken in this study to reveal *how* regional government in the six European regions of this study matters for the design of 'context-specific' regional innovation policy.

4.6.4 Indicators per level of analysis

The analysis of the RITTS policy process is done at four different levels of analysis: operational, procedural, constitutional, and contextual. By virtue of being the countersigning party in the contract with the European Commission, the RITTS project leader is not only the organisation that legally represents the region, but is also legally bound to deliver a regional innovation strategy that has been developed in accordance with the RITTS' methodological format. The four quality levels of government governance (Toonen et al., 1998; Toonen & Staatsen, 2004) presented in chapter 3 are operationalised in different analytical dimensions referred to as 'indicators'. A total of fifteen indicators are developed to structure the multiple-case analysis

in chapter 6. The sections below provide an overview of the indicators used per level of analysis to operationalise contextual policy-making in the area of innovation.

4.6.4.1 Operational level of analysis

Starting with the first-order level of governance quality, at the operational level regional government (in this study: the RITTS project leader) is assessed in terms of the organisation's responsiveness to the regional innovation needs at hand and its efficiency in using (scarce) resources to achieve innovation policy goals. The main issue at the operational quality level is about 'the job to be done' with the given means and within the available time, space, and technology (Toonen, 2009). The operational quality level deals with 'responsiveness': the ability to understand the regional innovation needs, to generate alternative problem solutions, and to implement the preferred policy solution within the given regional framework of competencies and resources.

Analysing the RITTS cases at the operational level of government governance starts with how well RITTS regions arrive at understanding the region's innovation *problématique* and how well they manage to translate this understanding in appropriate policies and implementation modalities. Four indicators are used to operationalise the operational level of government governance quality, as presented in Table 4.5.

Table 4.5: Operational level of governmental governance: 'responsiveness' as quality
Definition of 'responsiveness': The ability to understand the regional innovation needs, to generate alternative problem solutions, to decide on and implement the preferred policy solution within the given regional framework of competencies and resources.

Indicator (analytical dimension)	Definition
Regional innovation *problématique*	The definition of the problem as reported in the RITTS Stage 1 report based on the data gathering, data analysis, and discussion with the regional stakeholders.
Regional innovation policy strategy	The definition of the chosen policy response to the problem as reported in the RITTS Stage 2 (alternatively Stage 3) report.
Implementation approach	The definition of the modalities to implement the chosen policy response (who-does-what-when-how) as reported in the RITTS Stage 3 report.
RITTS project management	The definition of organisational modalities of the RITTS project – its set-up – to manage the RITTS project (resources, roles and responsibilities, reporting, staffing, etc.).

4.6.4.2 Procedural level of analysis

At the second-order level of governance quality, the procedural level, regional government (in this study: the RITTS project leader) is far less assessed in terms of 'what job needs to be done' than in terms of 'how to do the job'. The managerial focus on 'purpose' is replaced by 'procedure' as the key issue of good governance. The key concern is 'legitimacy' defined as the ability to put in place procedures enabling the voice of the region's innovation-relevant stakeholders to be heard. These procedures are put in place in order to arrive at a collective problem definition, to achieve consensus on the preferred policy solution, and to agree collectively on the distribution of labour for implementation, monitoring, and evaluation of the preferred policy solution between RITTS project leader and the region's innovation-relevant stakeholders. One of the key 'procedural ingredients' of a RITTS project is the Steering Committee and its membership. It is testimony to how decisions are reached, how evidence is used to shape these decisions, and how disagreements and conflicts are resolved. Four indicators are used to operationalise the procedural level of government governance quality, as presented in Table 4.6.

Table 4.6:	Procedural level of governmental governance: 'legitimacy' as quality
Definition of 'legitimacy': The ability to put in place procedures enabling the voice of the region's innovation-relevant stakeholders to be heard in order: to arrive at a collective problem definition, to achieve consensus on the preferred policy solution, and to agree collectively on the distribution of labour for implementation, monitoring, and evaluation of the preferred policy solution, between RITTS project leader and the region's innovation-relevant stakeholders	
Indicator (analytical dimension)	**Definition**
Steering Committee	The forum of regional stakeholders that are officially nominated as organisations to sit in the RITTS Steering Committee.
Data collection	The methods used to collect and analyse data on the region's innovation *problématique* in line with the RITTS methodological format.
Consensus-building and decision-taking	The way in which consensus among the regional stakeholders is achieved, conflicts are resolved, and decisions are taken throughout the RITTS project.
Monitoring and evaluation	The modalities that are agreed upon by the regional stakeholders to monitor and evaluate the progress in implementing the agreed policy response (post-RITTS).

4.6.4.3 Constitutional level of analysis

At the third-order level of governance quality, the constitutional level, the issue is not so much about 'the job', but about the regional government organisation put in charge of this job – in this study, the RITTS project leader's organisation. At this level, governmental governance quality is assessed in terms of how well the organisation is perceived and treated by others as an actor that can be entrusted with this job. A RITTS project had to achieve two 'jobs': (i) develop a regional innovation strategy that addresses the regional innovation *problématique*, and (ii) pursue a 'participatory' approach with the region's innovation-relevant actors in all stages of the policy cycle, that is, defining the problem collectively, brainstorming on possible policy options, achieving consensus on the preferred option, and agreeing on modalities of implementation, monitoring, and evaluation.

Applied to the RITTS setting, 'resilience' centres around two key and interlinked issues. Firstly, it is about the ability of the organisation in charge of the RITTS project to have understood what is at stake for the region, what conditions need to be created for a robust, adaptable, sustainable regional innovation system capable of handling change. And secondly, it is about the ability of the organisation in charge of the RITTS project to induce 'institutional change' in the region, by replacing outdated institutions (in the sense of organisations, but also norms, values, and behavioural attitudes) with ones that are more conducive to enhancing regional innovation performance; in creating the framework conditions "in which firms, associations and public agencies can engage in a self-organised process of interactive learning" (Morgan & Nauwelaers, 1999:12). Four analytical dimensions (referred to as 'indicators') are developed to operationalise the constitutional level of government governance quality, as presented in Table 4.7.

Table 4.7:	Constitutional level of governmental governance: 'resilience' as quality
Definition of 'resilience': The ability to create the proper conditions for innovation rendering the region 'fit for the future' combined with the ability to create structural conditions for 'institutional change' in the region.	
Indicator (analytical dimension)	**Definition**
Potential impact of the chosen strategy	The extent to which the chosen policy response has a likely, potential impact on the innovation capacity of the region's enterprises.
Assessment of the organisation in charge	The extent to which the organisation in charge of the RITTS project is perceived as being competent in innovation-led regional development.
Type of change induced in the region	The extent to which the organisation in charge of the RITTS project set in motion a process of change in the region.

Capacity to shape the region's future	The extent to which the organisation in charge of the RITTS project created conditions for a robust, adaptable, sustainable regional innovation system capable of handling change.

4.6.4.4 Contextual level of analysis

At the fourth and highest-order quality level, the contextual level, the issue is not so much about 'what job needs to be done', not about 'how is the job to be done', and neither about 'how sustainable is the what-and-how it's done'. The fourth-order quality level is at the meta-level and is about 'does it matter for the region', 'does it make sense for the region', 'is this what the region needs now'? At this level, governmental governance quality is assessed in terms of finding the right fit between what is needed in the region 'there and then', a contextualisation of regional solutions in terms of space and time. The key concern is 'congruence' defined as the ability to understand what is unique about the region and what its role is in a larger context, and to translate this into actions that 'make sense' to the region at that moment in time, actions that 'matter' now for the region to shape its future. Four indicators are used to operationalise the contextual level of government governance quality, as presented in Table 4.8.

Table 4.8:	Contextual level of governmental governance: 'congruence' as quality
Definition of 'congruence': The ability to understand what is unique about the region and what its role is in a larger context, and to translate this into actions that 'make sense' to the region at that moment in time, actions that 'matter' now for the region to shape its future.	
Indicator (analytical dimension)	**Definition**
Territorial demarcation	The region is creative in bringing the region's past into the future as a way to preserve the region's history through change.
Territorial identity	The region is characterised by a strong regional identity, shared historic awareness and community sense of belonging.
Territorial institution	The region understands its position within a larger framework of action and is able to 'institutionalise' this position.

4.7 Research design in stages

This study is the result of research that took place in different stages spread over several years. This section describes the different stages in the research and details the decisions taken in each stage; this is done to present the reader with a rationale of what activity took place, in what order, and why. The first stage does not qualify as 'research' in the academic sense, but it is here where the motivation to undertake this study arose and should, therefore, be mentioned if for no other reason than that. It locates the research in terms of where and why

it was undertaken in the first place. For narrative purposes, this section is written in active mode, in the first person.

4.7.1 Stage 1: 'observant participation' to locate the subject of research

With RITTS – and its sister programme RTP/RIS – being a pilot programme, the team in charge was not only administering the programme on behalf of the European Commission, but was also observing what was happening to this new idea of contextualised policy-making as it 'touched the ground'. I was part of this team for almost five years and helped launch three Calls for Proposals that resulted in 70+ regions participating in RITTS. With 'participant observation' being a research method where one participates organisationally in an activity that one observes as a researcher, I was engaged in what I will call 'observant participation'. In analogy of my definition of 'participant observation', I refer here to a situation where one observes analytically the activity one participates in as a stakeholder.

It would lack scientific integrity, though, to call this activity a research activity in the academic sense of the word. One is after all observing from an administrator's position and is viewed by the programme participants in the region in that capacity. The purpose of observation was to learn and decide on the pilot programme's future, not to collect data to answer a theoretical question.

What is peculiar and attractive about pilot programmes is that they offer considerable freedom within the organisation to do what researchers do: engaging in a search for patterns that allow one to make sense of the things that are happening. The RITTS programme participants themselves and the RITTS experts alike were aware of the programme's learning purpose. They were keen to offer us feedback, useful advice, comments, critiques, and other inputs, both 'on' and 'off-the-record'. The European Commission also undertook activities to facilitate learning and established a network of regions with a supporting secretariat ('Innovating Regions in Europe' (IRE)), a help desk, and a regular newsletter; the European Commission organised community-building events, and launched external evaluations.

During those five years, I took personal notes while cogitating over and exchanging ideas on possible explanations for certain outcomes or certain behaviours with the other members of the team. I was new to the job of administrator, but I was familiar with research from my previous years at MERIT (Maastricht Economic Research Institute on Innovation and Technology). What I experienced first-hand was too compelling to refrain from expressing my thinking in the occasional research paper, journal article, or conference presentation (Corvers, 1995; 1996; 1997a; 1997b; 1998; 1999; 2000; 2005; Corvers & Nijkamp, 1996; 2000; 2004).

4.7.2 Stage 2: literature research to define the research question

After that five-year period, I returned to MERIT, but the 'messiness' of policy practice did not leave my thoughts. The extent of cross-regional variation among RITTS regions in both policies proposed and policy-making processes was overwhelming. And this despite the fact that the RITTS assignment and the mandatory RITTS format were the same for all programme participants. I was eager to find an organising principle that could create some order in this chaos, but where to start. Moreover, what research question would be both academically relevant and meaningful from a practitioner's perspective. I spent a considerable amount of time studying different strands of academic literature, keen to find out what factors were considered to be causing this cross-regional variation. Not surprisingly, each different

theoretical perspective highlighted different factors and with it came the need to each time rephrase the research question. It was not until I decided to stop with 'causality' as the organising principle of my study that the literature research became focused. If contextualised policy-making with regard to innovation was a new idea for regional policy-makers, maybe causality was a step too far. Maybe the starting point had to be more modest centring on understanding better the phenomenon itself. Maybe academic research in the relatively new field of Regional Innovation Systems could contribute by unravelling what 'context-specific' actually means for innovation policy.

The Regional Innovation Systems literature was also interested in regional government as an actor shaping this policy, bringing in the variable of government system type. Based on this variable, the Regional Innovation Systems literature assumed that some regions (namely those endowed with regional autonomy within the government system's spatial distribution of power) would be better equipped to design contextual policies than other regions. Being a Public Administration student, I wondered whether this was the case. Was there any empirical evidence to support this claim? Are formal competencies enabling authoritative decision-making at the regional level the differentiating factor? And if so, why would this be the case?

According to the Regional Innovation Systems literature, this is considered to be the case because regional government endowed with those competencies are assumed to do two things better. Briefly, they are assumed being better at designing the 'right' policies and they are assumed being better at bringing together the 'right' actors. What was interesting about this theoretical answer was that it contained a role description of regional government (regional government in the role of 'responsive problem-solver' and of 'relations-handler') and a benchmark for assessing the quality of regional government's intervention (according to the operational, economic-instrumental criterion of 'responsiveness'). When looking at the matter from a Public Administration perspective, both are viewed differently not in the least because the phenomenon of contextualised policy-making itself is viewed differently; it is approached as a far more complex, multi-layered phenomenon (Toonen, 2015).

Having found the focus of my research, I decided to combine the insights from these two different strands of academic literature: Regional Innovation Systems and Public Administration. At the time, it was a combination of theoretical insights not ventured before.

4.7.3 Stage 3: archival records research as the main data collection technique

By the time the literature research had matured into a meaningful research question, the RITTS programme participants had moved on in their careers; some had changed jobs, others had changed organisations, or had even retired, some organisations had been reorganised, and others had ceased to exist all together. Using interviews as the main data collection technique seemed pointless, requiring considerable time and resource investment on my part to locate respondents only to find that they did not remember any of the details I was interested in. Another data gathering technique was needed. I decided to undertake archival records research and obtained permission to have access to the official RITTS records stored in the Central Archives of the European Commission in Kirchberg, Luxembourg, and Kortenberg, Belgium.

Using archival records and documentation is of relevance to every case study topic (Yin, 2003), and as a source of evidence they have multiple strengths. They are stable and can be reviewed repeatedly; they are precise in detailing events and exact in giving names, dates,

times, places, and references; they are unobtrusive in the sense that they do not result from the case study, but pre-existed; and they offer a broad coverage of events and settings over time (Yin, 2003). Apart from the possibility that the records can be less accurate and more biased towards the impression they want to pass on, the main limitation of this source of evidence is that the information has been produced with a different usage in mind. As Yin (2003) puts it: "(…), you need to remember that every document was written for some specific purpose and some specific audience *other than* [italics by Yin] those of the case study being done." The latter has to be kept in mind also here. Notwithstanding this, the decision opened up a treasure trove of written information. I guess this is another advantage of a pilot programme: it goes heavily documented.

In order for the archival records and documents to be useful for my research question, they had to satisfy the following conditions:
- the documents had to be archived as 'non-classified' information, meaning the documents would be publicly accessible;
- the documents had to be written in a language I had mastered, so that I would be able to understand the information they contained;
- the documents had to represent the viewpoints of at least four different types of actors involved in a RITTS project: the project leader, the Steering Committee, the team of experts, and the European Commission administrators.

These criteria were satisfied, making the RITTS records and RITTS-related documents suitable to provide for the raw data of this research. Before selecting the final six RITTS regions, over 500 archival records and documents held at the European Commission Central Archives were accessed and screened by me. As a source of evidence and in line with the strengths mentioned earlier, they offered similar types of information in relatively great detail for all RITTS regions. The archival records and documents consisted of multiple sources of evidence and multiple types of data. The selection of the final six regions was guided by methodological and practical criteria explained in section 4.5. Table 4.9 outlines the sources of evidence used for the six selected RITTS regions in my research.

Table 4.9:   Use of multiple sources of evidence
Archival records on RITTS:
Produced by the RITTS projects:
- RITTS Demand Analysis reports   - RITTS Supply Analysis reports   - RITTS Stage 1 reports   - RITTS Stage 2 reports   - RITTS Stage 3 reports   - RITTS Final reports   - RITTS Progress reports (6-monthly)   - Stand-alone thematic reports on topics requested by the RITTS project leader   - Own-initiative reports by the RITTS experts   - Official minutes of RITTS Steering Committee meetings   - Official minutes of other RITTS-related meetings   - Newspaper articles and other press information in the region

• PR leaflets of RITTS projects

Produced by European Commission administrators:
• Call for Proposals Info Package 1994 • Call for Proposals Info Package 1995 • Call for Proposals Info Package 1997 • Minutes of European Commission team meetings • Communication exchanges between DG XIII (RITTS) and DG XVI (RTP/RIS) • Mission reports reporting on on-site visits and meetings • Own-initiative documents on specific issues • Background information on RITTS projects • Reporting on RITTS events hosted by the European Commission

Produced by the IRE Network secretariat ('Innovating Regions in Europe'):
• Technical documents intended for RITTS programme participants • Publications intended for an audience wider than just RITTS • IRE newsletters (4-6 issues per year) • IRE website

Documentation of a more general nature:

• External evaluation studies on RITTS and RTP/RIS
• Empirical studies on European regional innovation systems
• Eurostat reports and statistical publications
• European Commission policy documents, such as:
   o European Commission White Paper on Growth, Competitiveness and Employment (1993)
   o European Commission Green Paper on Innovation (1995)
   o European Commission First Action Plan for Innovation (1996)
• Speeches by European Commissioners and members of European Parliament
• Newspaper articles and other press information

The archival research resulted in rethinking the order of the next steps. Based on the archival records and documents found, I had already started mapping the type of data available in those documents. I decided to finish this task first before developing indicators in order to establish what type of data were robust enough to work with.

4.7.4 Stage 4: choosing case study as the study's research methodology

I considered the case study to be the most appropriate research methodology in view of the purpose of the study, the research question and theoretical premises, and the type of data available. Yin (2003) defines a case study research method as "an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident."

In this study, the 'contemporary phenomenon' refers to contextualised policy-making undertaken within the framework of the RITTS programme between 1994 and 2000. In this study, what constitutes the 'real-life context' of this phenomenon is defined according to two variables: i) the region's dominant innovation *problématique* (at the time of the RITTS project) and ii) the regional government's administrative position within the nation-state (also at the

time of the RITTS project). As the study is interested in looking at multiple regions in different contexts, the research method of this study can be labelled a multiple-case or comparative case study (Yin).[16]

4.7.5 Stage 5: from data collection to data analysis and interpretation

By the end of Stage 4, I had established the body of academic literature to use, defined the research question, decided on the research methodology, mapped the data availability, and selected the case studies. The next decision that needed to be taken was how to organise, process, and analyse the data.

As said, the archival records and documents provided the raw, qualitative data and consisted of multiple sources of evidence and different types of data (see Table 4.9). However, for these raw data to be analysed, they first needed to be organised in a logical format. I decided to use the format of the RITTS project as the organising principle because this approach seemed to offer the best guarantee to arriving at as complete as possible a factual description of events similar (in type, not content) across all six regions. I documented per RITTS project the RITTS project milestones in chronological order, starting at Stage 0 (with the signing of the contract between European Commission and regional representative) and ending with the submission of the Stage 3 or Final report to the European Commission (describing the provisions to implement the agreed regional innovation policy).

Appendix 1 provides a detailed outline of the topics and questions covered in the factual description of the six RITTS case studies. This document served as the case study protocol. The topics and questions outlined in the case study protocol were a 'reminder check list' regarding the information that needed to be collected in each case in order "to keep the investigator on track as data collection proceeds" (Yin, 2003:74). All supporting information, such as tables, maps, lists, addresses, web links, statistics, documents, background information, personal notes, and so forth, were saved in digital folders created per RITTS project; in the absence of a digital version, a paper version was kept. Both digital and paper folders served as the case study database.

The data were organised according to the RITTS project format. The choice of indicators, however, had to be guided by the theoretical premises of the study. Data analysis is about making sense of the data by taking them apart and then regrouping them (or parts of them) differently so that patterns emerge. The theoretical premises of a study are the researcher's tool for regrouping the empirical data; they are the researcher's take on reality. The search for meaning, then, becomes "a search for patterns, for consistency, for consistency within certain conditions, which we call 'correspondence'" (Stake, 1995:78).

I had organised the data according to the RITTS project format, but for the multiple case data analysis I used the fifteen indicators or analytical dimensions described in section 4.5.4 to decompose and recompose these data. In the interpretation of the raw data contained in the archival records and documents, the in-depth knowledge of RITTS acquired during my time as administrator was of great help. I understood the 'historical context' in which the records were produced (Stan, 2010) and the personal notes taken years ago helped to breathe life into the documents. As these had been recorded when the events were taking place in real-time,

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[16] In line with Yin (2003), this study considers a multiple-case study not to be any different from a single case study in terms of methodology, but rather 'variants within the same methodological framework'.

they served as a 'memory refresher' bringing back the details of the debates and discussions, issues, and actors at the time.

Chapter 6 is the result of 'data regrouping', relating the empirical world of RITTS to the theoretical premises of the study by employing four levels of analysis. Chapter 7 is the result of the search for meaning, interpreting these findings within the context of the study's research question and presenting the patterns, the 'correspondences' that were found.

4.7.6 Stage 6: writing up the research

Undertaking a PhD research project in combination with a full-time job and a full-time family (against the backdrop of moving four times between three countries, managing two house renovations and one apartment renovation) is challenging to say the least: one is always short of time. In that context, choosing a case study as one's scientific approach to the subject matter is probably not the best decision time-wise. It is rather 'time-unwise', considering that the case study approach tends to condemn the researcher to a process of seemingly endless iteration: whether it concerns bounding the research and selecting the theoretical perspective; gathering, processing and analysing the data; or reporting on and writing up the research. The latter has been a process of iterative rounds of drafting and redrafting as well. And with time passing, the temptation to read a more recent publication (which then triggered a return to the data 'to quickly check something' often resulting in a new round of writing) was ever-present. A further factor that triggered additional redrafting to condense the text to its core essence was Leiden University's rule for a doctoral dissertation to stay within an upper limit of 100,000 words. I would hence like to notify the reader that, in line with Johann Wolfgang von Goethe's observation in 1787: "*So eine Arbeit wird eigentlich nie fertig, man muß sie für fertig erklären, wenn man nach Zeit und Umständen das möglichste getan hat*",[17] the study presented here is not finished, it is merely declared finished.

4.8 Criteria for judging the quality of the research design: validity, generalisability, and reliability

How does Public Administration carry out scientific inquiry? Within the philosophy of science, a range of epistemic traditions exists that are relevant for generating knowledge and building theory in Public Administration (Riccucci, 2010). The case study research method is an often-used qualitative technique in epistemic traditions of interpretivism, empiricism, post-positivism, and post-modernism within the social sciences (Riccucci, 2010). It is important to realise that the case study research method is as much a stand-alone methodological choice to generate knowledge, as it is embedded in ontological and epistemological frameworks in the social sciences (and with it a normative position on how scientific inquiry should be carried out).

This study falls within the post-positive approach to research, and with it comes a particular stand on ontological, epistemological, and methodological issues in knowledge generating and theory building. Although it is beyond the scope of this study to discuss these in detail, a few points will be made. As argued by Karl Popper, human knowledge can only be gained through empirical falsification; propositions can be falsified but can never be 'proven' correct (Riccucci, 2010). Ontologically, the researcher is considered an integral part of reality,

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[17] "This kind of work is never finished, one has to declare it finished when one has, within limits of time and circumstances, done all that was possible."

"an informed subject, just like the actual research subjects, and thus is implicated in the generation of data" (Riccucci, 2010). Epistemologically, there is no such thing as 'objective' reality existing beyond the human mind (as with empiricism and positivism), only 'qualified' reality. Interpretivism and post-modernism consider universal 'truth' to be non-existing as all truth is socially constructed and culturally bound. Post-positivism considers that 'truth' exists, but reality is too complex to be fully understood or explained. Methodologically, there is a prevalence of empirically driven qualitative research methods, such as case study, ethnography, narratives, storytelling, participant observation, participatory policy analysis, and qualitative comparative analysis (QCA). A combined use of research methods (triangulation) is advocated to counterbalance bias and error coming from one research perspective and to reinforce the study's reliability. All knowledge is considered to be acquired through 'conjecture' and to be subject to falsification (Riccucci, 2010).

The research design of this study has been detailed in the previous section. In order to judge the quality of a design, Yin (2003) refers to four tests that are commonly used to establish the quality of any empirical social research, case studies included. These four tests are about establishing 'construct validity', 'internal validity', 'external validity', and 'reliability'. The following measures were taken to ensure that the quality of the research design passes these tests.

The first test is about 'construct validity' and refers to "establishing correct operational measures for the concepts being studied" (Yin, 2003). In other words, is the right thing being measured? In this study, the following decisions were taken to reinforce construct validity. Literature research was conducted in order to establish a definition of 'context-specific' regional innovation policy. A further choice was made to use Tödtling and Trippl's typology of ideal-typical problem definitions and policy solutions in three regional innovation system types: peripheral, old industrial, and metropolitan. This typology was used as the theoretical benchmark for the empirical work. Based on the specification of a theoretical pattern, pattern matching was applied by comparing the observed pattern in each of the six cases in this study with the theoretically predicted pattern (Trochim, 1989). Raw data were cross-sectional in type and collected from multiple sources of evidence (see Table 4.9). Data interpretation was guided by fifteen indicators that served to operationalise the concept of contextual policy-making in the area of innovation.

The second test is about 'internal validity' and deals with "establishing a causal relationship, where certain conditions are shown to lead to other conditions, as distinguished from spurious relationships" (Yin, 2003). This test applies to explanatory case studies and not to descriptive and exploratory case studies. Pattern matching is often presented as a research technique restricted to the causal hypothesis testing case and with the purpose of research aimed at testing or developing theory. According to Trochim (1989), other uses are not only possible, but are also desirable from a research quality perspective. Being qualitative in nature, my research utilised pattern matching "as a rubric for categorizing data", one of its alternative uses and aimed at reinforcing construct validity (Trochim, 1989).

The third test is about 'external validity', also known as a study's generalisability, and is about "establishing the domain to which a study's findings can be generalized" (Yin, 2003). The key issue is: are the results applicable to a domain or population larger than just the cases under investigation? In quantitative research, the use of representative sampling is well accepted as a way to ensure generalisability of the research findings. In qualitative case study research, the issue is not to find a 'representative' case study that stands for a larger domain

or population, but rather the opposite. A case study is selected for its 'uniqueness' on the basis of criteria that serve to restrict the choice, "be it context, time, or population characteristics that define the range restriction" (Yue, 2010:961). Case study research has been considered 'idiographic', trying "to explain and understand the individual cases in their own unique contexts" (Aaltio & Heilmann, 2010:69).

According to Yin (2003), the point about external validity in case study research is not *statistical* generalisability to populations or domains, but *analytical* generalisability towards theory, moving from the specific to the general. The road to theory building is not through the study's sampling logic commonly used in surveys, but through its replication logic. This study uses multiple cases to strengthen the replication logic of the research findings. This is a well-established approach where "the evidence from multiple cases is often considered more compelling, and the overall study is therefore regarded as being more robust" (Herriot & Firestone, 1983, quoted in Yin, 2003). These multiple cases each present a 'whole' story that can be best compared to the replication logic of multiple experiments as a way to accumulate knowledge across experiments (Yin, 2003).

The six region cases in this study were selected out of 72 regions participating in an EU funded programme called RITTS based on two dimensions: innovation *problématique* and administrative position. The preference to undertake a multiple-case study over a single case study is to allow for a literal and a theoretical replication, and hence strengthen the study's generalisability. As Yin (2003) explains, a literal replication serves to predict similar results based on a theoretical framework that defines "the conditions under which a particular phenomenon is likely to be found"; it is a 'within-group' comparison. In this study, the proposition of contextualised policy-making in the area of innovation is expected to be similar for regions sharing a similar innovation *problématique*. Regions with similar innovation system deficiencies are expected to design similar contextualised policies.

A theoretical replication serves "to predict contrasting results but for predictable reasons" (Yin, 2003), based on a theoretical framework that defines when a particular phenomenon is not likely to be found; it is an 'across-groups' comparison. In this study, should regions with a similar innovation *problématique* differ in their policy solutions, then the proposition of contextualised policy-making is expected to be dissimilar for regions with and those without regional autonomy. Regions with substantial degrees of regional autonomy are expected to deliver a more context-specific policy than regions without (their policy solutions should resemble the theoretically predicted policy responses more closely).

The fourth test is about 'reliability', which is "demonstrating that the operations of a study, such as the data collection procedures, can be repeated, with the same results" (Yin, 2003). Put differently, if the research were to be repeated by a different researcher at a later point in time, would the same results be found. Each of the individual steps that were taken in this research has been described in detail in the previous section, presenting the reader with a reasoned overview of what activities took place in what order and why. By doing so, I am confident that a 'chain of evidence' as Yin (2003) calls it has been established that allows an external observer to trace the steps. Figure 4.1 schematises how the different steps link up to a 'chain of evidence' in this study.

Besides detailing the steps in the evidentiary process, another well-established approach in case study research to establish reliability is triangulation. Triangulation aims at improving 'convergent validity'. This is "the substantiation of an empirical phenomenon through the use

Figure 4.1: A schematic overview of the study's evidentiary process (Yin, 2003)
Step 1: Data gathering
Empirical data originate from archival records and documents held at the European Commission Central Archives. This type of information is labelled 'non-classified' and is publicly accessible.

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Step 2: Data extraction
Step 2a: Case study protocol
Data extraction was guided by a document in descriptive format that served as the case study protocol. A detailed outline of the topics and questions covered in the case study's protocol can be found in Appendix 1.
Step 2b: Multiple case description
The case study protocol served as a checklist for the description of the phenomenon under investigation – contextualised policy-making – in each of the six region cases of the study.

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Step 3: Data analysis
Step 3a: Case study database
All supporting information (such as tables, maps, lists, web addresses, statistics, documents, background information, personal notes, etc.) was saved in digital folders created per RITTS project; in the absence of a digital version, a paper version was kept. Both digital and paper folders served as the case study database.
Step 3b: Case study questions
The four quality levels of governmental governance were operationalised in different analytical dimensions referred to as 'indicators'. Fifteen indicators were developed to structure the multiple-case analysis. The case study questions (Appendix 1) guided the data collection and analysis per indicator.

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Step 4: Data interpretation
The output of step 3b served as the input for step 4. The data interpretation was guided by the study's theoretical propositions. The latter guided the pattern search. The pattern search was done through 'within-group' and 'across-groups' comparisons of the six case studies.

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Step 5: Case study reporting
The case study findings resulting from step 4 served as the basis from which the case study's conclusions were drawn. The reporting on the findings per case is done in chapter 6; reporting on the conclusions is done in chapter 7.

of multiple sources of evidence" in order to corroborate data and reduce bias and error (Wolfram Cox & Hassard, 2010:945). Four different types of triangulation exist (Denzin, 1978; Patton, 1987; Yin, 2003) with each type having various subtypes: 1) data triangulation, of multiple data sources; 2) investigator triangulation, of multiple researchers or evaluators; 3) methodological triangulation, of multiple research methods; and 4) theory triangulation, of multiple theoretical perspectives. In this study, triangulation was established through:

- data triangulation – the combined use of multiple data sources and multiple data types (see Table 4.9) and selecting multiple cases as the object of data collection;
- methodological triangulation – the combined use of literature research, archival records research, document analysis, and personal observations as research techniques;
- theory triangulation – firstly, by combining theoretical perspectives from the Regional Innovation Systems literature and Public Administration; secondly, by approaching the phenomenon of contextual policy-making as a multi-layered phenomenon for which data were collected at four different levels of analysis (operational, procedural, constitutional, contextual).

4.9 Summary

In this chapter, the research design of the study has been explained. In order to answer the study's research question, the study employs a descriptive, multiple-case study research method. Each of the six case studies consists of a European region that participated in the EU programme RITTS in the period 1994-1998. Methodological as well as practical criteria guided the selection of the six case studies; the case selection criteria have been detailed in this chapter.

In order to translate the study's theoretical research question into an empirically observable one for which data can be collected, regional government – which is the study's unit of analysis – has been defined as the RITTS project leader, the regional government organisation in charge of the policy design process. The study's focus is on analysing the decision-making process that leads up to the agreed policy – which had to be 'context-specific' – in each of the six RITTS regions. The RITTS policy design process serves as the study's locus to analyse 'who' decided 'what', 'when', 'how' and if possible 'why' during the three stages of the RITTS project.

In this chapter, a total of fifteen analytical dimensions, referred to as 'indicators', have been developed to structure the multiple-case analysis in chapter 6. Each level of governance analysis has been operationalised with four indicators, except the contextual level which has three. The study is based on qualitative data that were gathered from an existing dataset through archival records research and documentation analysis, as well as personal observations.

The next chapter applies chapter 2's theoretical typology of regional innovation system failures and context-specific policy answers to the six case studies. This typology serves as the theoretical benchmark to determine to what extent the empirical reality in the six regions confirms what Regional Innovation Systems theory predicts. Do regions with a similar regional innovation *problématique* design similar regional innovation policies?

5

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 & Trippl (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 & Trippl'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 & Trippl (2005) propose an ideal-typical policy mix of measures considered 'context-specific' (see Table 2.3 in chapter 2). For peripheral regional

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[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 competitivity 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 Regions[19] (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.

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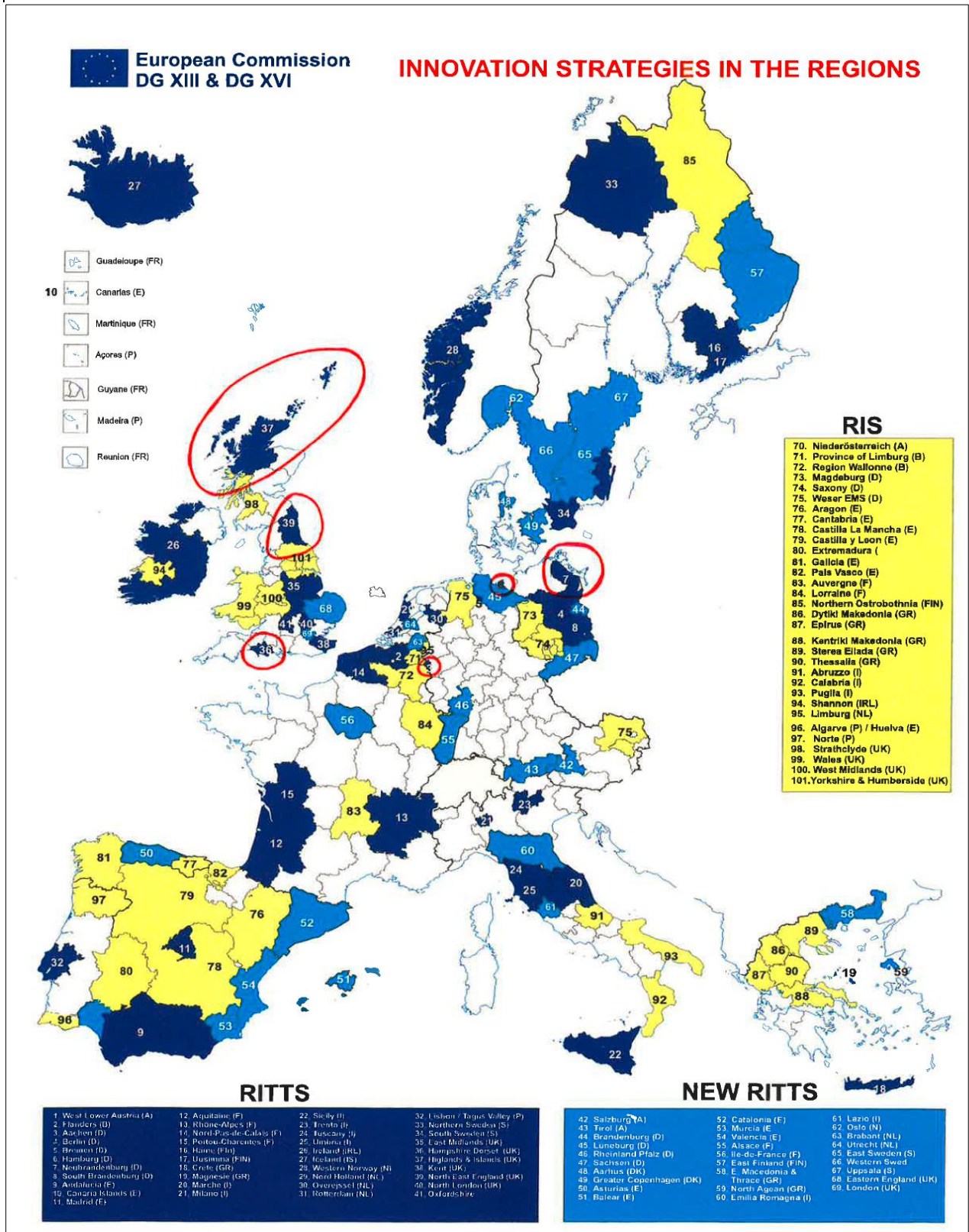
Legend: the six RITTS projects included in the study are circled in red.
Source: European Commission, internal memo, 1997

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.

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[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-assisted[21] 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.

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[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, Müritz, 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 Neubandenburg 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

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[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 capacity[24] – 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.

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[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 Tödtling & Trippl (2005) typology of regional innovation system types as presented in chapter 2.

Table 5.1:	Pattern matching of regional innovation *problématique* 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 Tödtling & Trippl (2005); Martin & Trippl (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':

o 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;

o 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 (*Zweigstelle*)	
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 Tödtling & Trippl (2005); Martin & Trippl (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 Tödtling & Trippl (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 & Trippl (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.

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[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 *problématique* 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

Based on Tödtling & Trippl (2005); Martin & Trippl (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 Tödtling & Trippl (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 *Kreis* Düren	
	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		Supply-driven: #Increase collaboration and coordination among intermediary TT organisations. Agreed for each TT organisation to visit 10 companies. #Provide ICT technology services for company purposes. Agreed to launch pilot on Information Society under the banner of the *Regional Konferenz*. #Establish 2 new TT agencies to correct for geographical imbalance and build up knowledge about local companies (in Geilenkirchen, *Kreis* Heinsberg, and in Euskirchen, *Kreis* Euskirchen) #Propose to develop monitoring and evaluation system to monitor future changes in ITT provision, coordinated by project leader. Innovation funding: #Improve risk financing through better collaboration among sources of funding within and outside the region. Agreed to organise Fora to exchange info. #Improve the user friendliness of the TPW programme (*Technologieförderprogramm*	Supply-driven: #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. #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. # 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'. #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.

		Wirtschaft). Agreed to draft a letter to the Landes Ministry with suggestions for improvement (*Anforderungspapier*)	#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 (*Unternehmenspatenschaften*) to improve their innovative capabilities. Agreed to build up a database of interested 'godfathers' to coach young companies.	

Based on Tödtling & Trippl (2005); Martin & Trippl (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

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[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 Tödtling & Trippl (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

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[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 Tödtling & Trippl (2005) typology of regional innovation system types as presented in chapter 2.

Table 5.5:	Pattern matching of regional innovation *problématique* 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)	distribution, hotels, restaurants))
		√ YES, knowledge-based clusters are missing	√ 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-elated networking	√ YES	√ YES

Based on Tödtling & Trippl (2005); Martin & Trippl (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	#*Technologiestiftung Hamburg* to create networks between Hamburg knowledge providers (academia and research institutions) and Hamburg firms	#*Regional Innovation Network* 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	#*Technologiestiftung Hamburg* to initiate regional debate on the strengths and weaknesses of individual economic sectors and analyse the innovation potential	#*Sector Focus Programme* is a coordinated sectoral approach to develop SCM marine sector into a European marine pool of excellence

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[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		*#Technology Development Unit* to help firms develop higher value products
	Attract cluster-related FDI		
	Support start-ups and spin-offs in knowledge-based industries		*#Technology Development Unit* 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	*#Technologiestiftung Hamburg* to market the knowledge potential of Hamburg knowledge providers (academia and research institutions)	*#Technology Development Unit* 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		#Change in funding of 3 ITT intermediaries (reduced regional government funding, larger-share external matching) #Ministry to set up thematic working groups with other ITT organisations to favour a more project-based funding (and less government funding) #Ministry created a new ITT coordination body: *Technologiestiftung Hamburg* and assigned a 50 million euro budget *#Technologiestiftung Hamburg* to interlink and coordinate existing ITT organisations and instruments, incl. via public tendering	*#Innovation Datanet* 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 *#Technology Development Unit* at Business Links, unit is staffed with 5 technology business managers and will alleviate resource constraints at Business Links
Networks	Promote regional networks among firms, encourage local research–industry interfaces	*#Technologiestiftung Hamburg* to create networks between Hamburg knowledge providers (academia and research institutions) and Hamburg firms	*#Regional Innovation Network* to facilitate a more effective interface between SCM firms, knowledge providers (academia and research institutions) and ITT organisations
Other		*#Technologiestiftung Hamburg* to increase innovation awareness among	*#Regional Technology Funding* 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)

Based on Tödtling & Trippl (2005); Martin & Trippl (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

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[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.

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[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 & Trippl (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 Tödtling & Trippl (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.

6

Analysis of the case studies

"The Queen [Marie Antoinette, wife of King Louis XVI of France] *is hated, humbled, mortified (…) to know that she favours a measure is the certain means to frustrate its success"*

Letter by Governor Morris dated July 1st, 1789, quoted in Fraser (2001:258)

6.1 Introduction

The description of the six RITTS cases presented in the previous chapter culminated in two conclusions drawn from applying a pattern matching technique (Trochim, 1989). Firstly, in all six regions investigated, the problem definition at the end of Stage 1 closely matched the theoretically predicted one for that particular regional innovation system type. Secondly, however, the regional innovation policies proposed in all six regions coincided only partly, if at all, with the theoretically predicted policy solutions for that particular system type. It seems that having an accurate, region-specific problem definition does not necessarily translate into a regional innovation policy that is as contextualised as theory assumes. In real life, similar innovation problems need not materialise in similar policy measures addressing them. Why this is the case requires opening up the black box of policy-making to understand better *how* the decisions came about in each of the six regions that led to this particular set of policy measures and not another. That is the purpose of this chapter.

Chapter 6 revisits the RITTS cases but this time applies the analytical focus presented in chapter 3. The two guiding questions of this chapter are, firstly, what type of 'policy discussion' is taking place in the policy-making process: mainly operational, procedural, constitutional or contextual? Secondly, what does this discussion reveal about the role of regional government in designing 'context-specific' regional innovation policy? Sections 6.2, 6.3 and 6.4 deal with the first question; section 6.5 deals with the second. The chapter ends with a summary in section 6.6. The regions are presented in pairs according to the region's dominant innovation *problématique*.

6.2 Peripheral RITTS regions Neubrandenburg and Highlands and Islands

6.2.1 Operational level of governance quality: 'responsiveness'

Starting with the first-order level of governance, at the operational level, regional government (in this study, the organisation represented by the RITTS project leader) is assessed in terms of the organisation's responsiveness to the regional innovation needs at hand and its efficiency in using scarce resources to achieve innovation policy goals. The main issue at the operational quality level is about 'the job to be done' with the given means and within the available time, space, and technology (Toonen, 2009).

The operational quality level deals with 'responsiveness': the ability to understand the regional innovation needs, to generate alternative problem solutions, and to implement the preferred policy solution within the given regional framework of competencies and resources.

Analysing the RITTS cases at the operational level of government governance starts with how well RITTS regions achieved understanding of their region's innovation *problématique* and how well they managed to translate this understanding into appropriate policies and implementation modalities.

Four indicators in the sense of 'analytical dimensions' are used to operationalise the first-order level of governance quality, the operational level, as presented in chapter 3:
➢ Regional innovation *problématique*
➢ Regional innovation policy strategy
➢ Implementation approach
➢ RITTS project management.

6.2.1.1 Regional innovation *problématique*

Both regions' innovation systems are characterised by 'organisational thinness', lacking innovation-relevant players with few inter-linkages, set in a wider context of unfavourable socio-economic conditions. The analyses in both regions showed that their regional economy was dominated by small and medium-sized enterprises in low to medium-tech sectors: agricultural (including forestry) and agro-industrial, public administration (including military), manufacturing (construction, metallurgy, food processing), and some tourism. The absorptive capacity of local companies was limited, rendering these firms in 'splendid isolation': few innovation-relevant resources were available in the region, and given the limited absorptive capacity, accessing those that existed outside the region was difficult.

Both regions had benefited from central government support to build up a modern innovation support and technology transfer (ITT) infrastructure. The majority of SMEs were, however, not aware of or not able to use the infrastructure which they considered to be not transparent, too self-serving, and too much focused on 'preferred customers'. The research activities undertaken in Stage 1 revealed additional problems at both company and system level hindering the region's innovation performance. In RITTS Neubrandenburg, Stage 1 revealed the unpleasant reality that the region remained a structurally weak region, historically, and now exacerbated by the *Wende*. The reunification of Germany and its aftermath in the early 1990s worsened the region's already unfavourable socio-economic indicators (above-average poverty level, high unemployment, high youth unemployment, rising crime rates, increase in extreme-right political voting, etc.).

In RITTS Highlands and Islands, the enterprises in the region demonstrated a low innovative capacity, and companies produced mainly for local consumption and were not widely exposed to sophisticated users driving innovation. Unlike RITTS Neubrandenburg, however, innovation was widely perceived to be key to long-term competitiveness and sustained growth by the regional enterprises that were surveyed.

In both peripheral regions, government actors at central government level (United Kingdom) and federal and State level (Germany) had invested in building up an ITT infrastructure in the years preceding RITTS. However, the public support system did not function optimally: the ITT agencies proved unable to offer their services beyond the small group of already innovation-aware companies. What was also missing was the inter-connection between the ITT intermediaries and other knowledge providers in the region. As a result, firms considered the innovation support landscape opaque. In addition, most SMEs lacked the absorptive capacity to make optimal use of the available innovation support.

6.2.1.2 Regional innovation policy strategy

Suggestions were made to increase 'networking' as a way to overcome the 'atomised' regional innovation system: among ITT intermediaries (RITTS Neubrandenburg) and among companies (RITTS Highlands and Islands). The low level of absorptive capacity among regional businesses was also acknowledged as a genuine obstacle to the region's innovation performance by both peripheral regions. The approach to address this varied, with RITTS Neubrandenburg having publicly funded ITT actors in the region carry out an innovation audit at companies, and RITTS Highlands and Islands reinforcing the links between companies and the Further Education Colleges through the central government-funded Teaching Company Scheme. Both regions

also acknowledged that the skills of the ITT actors and Further Education Colleges themselves needed to be upgraded to be able to perform innovation auditing and coaching at companies meaningfully.

Where RITTS Neubrandenburg and RITTS Highlands and Islands fundamentally differed was in the importance attached to 'research' as the basis for the region to upgrade its innovation performance. Whereas RITTS Neubrandenburg was getting to grips with the basic notions of 'entrepreneurship' in a free market system as part of an enlarged, reunified Germany, RITTS Highlands and Islands was very clear and adamant about the importance for the region of having its own research-based university. During RITTS, possibilities for setting up Research Trusts at the Further Education Colleges in areas of particular interest to the region – information technology, environmental research and marine resources (particularly aquaculture) – were investigated, despite disagreement with the team of experts on this. The managerial solution was to start producing the required knowledge oneself in the region; it was on this basis that links with other research organisations outside the home region could be established. The emphasis that RITTS Highlands and Islands placed on the role of research for the region's future can be considered 'atypical' from a theoretical perspective, being the peripheral region they are, but at the same time it was a very strategic choice.

6.2.1.3 Implementation approach

Achieving quick initial results (Neubrandenburg) after RITTS ended, as well as implementing practical measures during the duration of RITTS (Highlands and Islands), were management considerations shared by both project leaders. The emphasis on demonstrating initial results quickly was seen as quintessential to getting the RITTS approach accepted (Highlands and Islands) or, in the case of RITTS Neubrandenburg, to getting the project leader's organisation acknowledged as an innovation-relevant actor in the region.

Keeping the momentum going should not, however, be confused with keeping RITTS alive once the contract obligations with the European Commission had been fulfilled. For the RITTS Highlands and Islands project leader, the RITTS project was instrumental in the grander strategy for the region to establish its own university. As soon as the fact-finding Stage 1 was over, the project leader employed a hands-off project management style. No conditions were put in place to ensure successful policy delivery and policy monitoring after the RITTS project had ended. The RITTS Steering Group was dissolved, and without any follow-up, the RITTS project remained a stand-alone study project. No tears seem to have been shed over RITTS, also because the Scotland Act[33] was about to become a reality, opening up a whole range of vast, new political possibilities.

The situation for the RITTS Neubrandenburg project leader was very different. Being a new player in the region, winning a European bid was important for the organisation to acquire visibility and build up a reputation in the region. The project leader also had a managerial interest in keeping the RITTS Steering Committee alive after the project had ended, to encourage responsibility in its members towards implementing the measures agreed. Being a new organisation with a small budget and an obligation to acquire additional third party funding alongside the Ministry's core funding, the continuation of RITTS was also important for this reason. Towards the end of the RITTS project, the project leader prepared

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[33] The 1998 Scotland Act is an act of the Parliament of the United Kingdom which legislated for the establishment of the devolved Scottish Parliament with tax varying powers and the Scottish Government (then Scottish Executive) (source: https://en.m.wikipedia.org/wiki/Scotland_Act_1998, accessed on 1 Nov 2018).

a RIS proposal – DG REGIO's regional innovation 'sister' programme – integrating the RITTS experience, and submitted it for approval to the State Ministry of Economic Affairs, which was to provide funding to match the EU grant.

6.2.1.4 RITTS project management

The RITTS project budget in both Neubrandenburg and Highlands and Islands was used for RITTS project matters. In both cases, most of the RITTS budget was spent on external expertise; additional resources – human, infrastructure – had to be (and were) made available by each project leader in order to manage the RITTS project effectively. The amount of time and resources needed to run a RITTS project was underestimated by all RITTS project participants in the first and even second batch of selected RITTS projects.

Both project leaders put in place a distribution of labour – 'who-does-what' – between the expert team and the project team. They also introduced a system to provide reporting to the European Commission in its capacity as funding organisation.

The managerial style of both project leaders changed – consciously – after Stage 1. The RITTS Neubrandenburg project leader intensified the interactions with the experts and the Steering Committee members to achieve a regional consensus, whereas the RITTS Highlands and Islands project leader continued after Stage 1 in name only, leaving most of the administrative tasks to the team of experts.

The standing of the RITTS project in each of the organisations was very different. For the RITTS Neubrandenburg project leader, it was an important project with a large spin-off potential to acquire other EU projects and gain standing in the region (reputation effect). For the RITTS Highlands and Islands project leader, however, RITTS was 'peanuts': a relatively small project, budget-wise, within the organisation's impressive portfolio of projects and activities.

6.2.2 Procedural level of governance quality: 'legitimacy'

The second-order level of governance, the procedural level, assesses the success or failure of the RITTS project leader far less in terms of 'what job needs to be done' as in terms of 'how is the job done'. At the procedural level, regional government (in this study, the organisation represented by the RITTS project leader) is assessed in terms of the organisation's ability to introduce procedures that enable the voice of the region's innovation-relevant stakeholders to be heard.

The procedural quality level deals with 'legitimacy'. Analysing the RITTS cases at the procedural level of governmental governance quality investigates how data have been collected, to what extent the research results are presented and discussed with regional stakeholders, how decisions are reached, how evidence is used to shape these decisions, and how disagreements and conflicts are resolved.

Four indicators in the sense of 'analytical dimensions' are used to operationalise the second-order level of governance quality, the procedural level, as presented in chapter 3:
- Steering Committee
- Data collection
- Consensus-building and decision-taking
- Monitoring and evaluation.

6.2.2.1 Steering Committee

The project leader in both RITTS Neubrandenburg and RITTS Highlands and Islands chose to work with a small Steering Committee; the appointed members represented the key stakeholders relevant to the regional innovation system. Other relevant innovation actors, such as universities and research institutes, could have been appointed as Steering Committee members, but were not. RITTS Neubrandenburg chose to work with smaller Focus Groups in Stage 2, which did incorporate a wider group of stakeholders. The organisations, however, were represented by staff members who lacked the discretionary power to commit their organisation (representation at the 'copy boy' level). RITTS Highlands and Islands was the first of the RITTS projects to include local firms among its Steering Group members. In Stage 2, the Steering Group was enlarged with representatives from the education and research sector, given the importance attached to this sector for the region's future.

In both cases, the final outcome of the Steering Committee's decision-making process needed to have all the members' consent. Despite intense efforts by the RITTS Neubrandenburg project leader, it was very difficult to engage the Steering Committee members in any future-oriented regional debate, resulting in weak commitments to what was agreed as final output. Without the strong commitment of the region's main decision-maker – the Mecklenburg-Vorpommern State Ministry of Economic Affairs – the commitment of other important Steering Committee members such as the Chambers of Commerce and Industry (IHK and HWK) was negatively affected.

The opposite occurred in RITTS Highlands and Islands where procedural rules seemed to be almost superfluous, as the decision-making process in the Steering Committee had a dynamic of its own in function of making the dream of a research-based university in the region a reality. The Steering Group members knew each other and sat in other clubs and constellations as well. One could argue that a 'consensual elite' (Painter & Pierre, 2005) was present in both regions and its dynamics very much conditioned the decision-making process.

6.2.2.2 Data collection

For the data collection in Stage 1, RITTS Neubrandenburg set up a well-defined distribution of labour, and a large part of the RITTS project budget was spent on collecting new, primary data. The evidence gathering process was a collective process involving both the project leader and the team of national and international experts. The lack of interest among regional companies resulted in an alarmingly low survey response rate. With three months additional time granted by the European Commission, the team of experts managed to increase the response rate to a meaningful level. The team of experts in the RITTS Neubrandenburg project performed the role of 'ally' to the project leader and were employed for a variety of tasks beyond data collection. These tasks included organising and animating the various Working Groups, proposing options for possible actions, acting as the 'messenger' bearing predominantly bad news, sharing international experiences, and benchmarking results with the Steering Committee members.

Although the 'who-does-what' division of labour was also well defined in RITTS Highlands and Islands, the relationship between the project leader and the experts was more unilateral in nature and more hands-off. The 'ally' of the RITTS Highlands and Islands project leader were the Steering Group members. In Stage 1, the project leader obtained very relevant and up-to-date information on the region's innovation status. In Stage 2, the team of experts

were asked to continue doing research in the form of a feasibility study exploring the opportunities for Research Trusts and setting up a networked system of Further Education Colleges. The Steering Committee members were very much seen as 'the authority' on the region (unlike the London-based team of experts), whereas in RITTS Neubrandenburg the experts were very much seen as the 'international experts' who, thanks to their knowledge, would be able to help the region advance.

Not surprisingly, the impact of the Stage 1 study results was very different between RITTS Neubrandenburg and RITTS Highlands and Islands. The 'external expert view' on the region was accepted in RITTS Neubrandenburg, even though it unleashed feelings of defeat and disbelief about the region's innovation status ('is it that bad?'). RITTS Highlands and Islands, on the other hand, did not accept the conclusions of the study team, disregarded the key Stage 1 conclusions, and reorganised the tasks in the remainder of the RITTS project in line with the preferences of the Steering Committee.

In both RITTS regions, the expert teams were asked to collect new, primary data through surveys, interviews and workshops. This approach enabled regional stakeholders and ITT users to interact differently with policy-makers and to voice their ideas about the region's future. In both RITTS regions, the expert teams were asked to engage in regional benchmarking and networking with other regions. Peripheral regions share the feeling of 'isolation' and what both regions appreciated about participating in this EU project was the emphasis on and opportunities offered to encounter other regions from different Member States and exchange views.

6.2.2.3 Consensus-building and decision-taking

RITTS projects have been referred to by project leaders, particularly those of the first and second batch of RITTS projects (1994-1996 and 1996-1998), as 'opening up Pandora's Box'. Although new, unexpected information on the region's innovation status might have emerged from the research activities in Stage 1, the force of 'Pandora's Box' was most acutely felt in Stage 2, when decisions had to be made on future courses of action and commitments generated financial and organisational consequences.

In RITTS Neubrandenburg, the Steering Committee was reluctant to take any decision throughout the whole RITTS project and its members interchangeably used techniques of delay (when decisions were postponed), avoidance (preferring not to take any decisions to avoid entering into conflicts due to the choices made), and minimal agreements (to demonstrate good will). The way regional consensus was achieved in RITTS Neubrandenburg seemed to hinge more on the lack of a strong opposition than its presence, staying clear of any form of debate and discussion (legacy of the recent past?). It resulted in a search for the lowest common denominator in policy measures for which consensus could be achieved.

RITTS Highlands and Islands started from a shared consensus between the project leader and Steering Committee members on the role of RITTS in the larger strategy of obtaining a university in the region. The team of experts were expected to stay within the boundaries of their role as researchers performing a 'study commissioned by the region'. In the course of Stage 1, the views and suggestions of the experts started to diverge from those of the project leader and Steering Committee. The differences in viewpoints between the experts on the one hand and the project leader and Steering Group members on the other seemed to reinforce the initial consensus ('common enemy' dynamic). To an outside observer, the way regional consensus emerged more closely resembled 'our ideas against those of the experts' than a

true regional debate on the options proposed in Stage 1. Almost as if 'to prove their point' to the experts, the Steering Group was enlarged during Stage 2 with representatives from the education and research sector: organisations that supported the viewpoints of the project leader and Steering Committee.

6.2.2.4 Monitoring and evaluation

When the sixth and final Steering Committee meeting took place in RITTS Neubrandenburg, regional consensus was achieved on a number of concrete measures to be taken as a follow-up of RITTS. Equally, responsibilities were assigned (and accepted) on which organisation was going to be in charge of what measure. However, no commitment could be obtained on the framework conditions needed to implement the measures, funding included, nor was any evaluation system discussed, let alone put in place, to monitor the follow-up. The Steering Committee members acknowledged the importance of a monitoring and evaluation system, but shared the view that this was something for later: *für die Folgezeit*.

Very differently, a new function of Innovation and Technology Counsellor (ITC) was created at the Business Information Source and three ITCs were appointed during the lifetime of the RITTS Highlands and Islands project. Dealing with information and communication technology, the ITCs were supposed to raise awareness, give IT-related advice and refer companies to more specialist IT advice when required. The ITCs were also given a role in promoting better use of the Teaching Company Scheme, investigating capabilities within the Further Education College network, and looking into student-staff exchanges with industry. Besides the ITCs, Stage 2 was used to perform a feasibility study on each of the three proposed Research Trusts: one in IT, one in marine resources, and one in environmental research. No attempt was made to design or even discuss an evaluation and monitoring system; the emphasis was very much on implementing ideas quickly.

6.2.3 Constitutional level of governance quality: 'resilience'

At the third-order level of governance, the constitutional level, the issue is not so much about 'the task', but about the organisation put in charge of this task (in this study, the RITTS project leader's organisation). At this level, governmental governance quality is assessed in terms of how well the organisation is perceived by others as an actor that can be entrusted with this task to make the region 'fit for the future'.

The constitutional level deals with 'resilience': the ability to create the proper conditions for innovation, rendering the region 'fit for the future', combined with the ability to create structural conditions for 'institutional change' in the region.

Analysing the RITTS cases at the constitutional level of governmental governance quality looks at the potential for regional change due to the RITTS project as well as an assessment of the RITTS project leader's potential to orchestrate this change within or beyond the RITTS programme.

Four indicators in the sense of 'analytical dimensions' are used to operationalise the third-order level of governance quality, the constitutional level, as presented in chapter 3:
  ➢ Potential impact of the chosen strategy
  ➢ Assessment of the organisation in charge
  ➢ Type of change induced in the region
  ➢ Capacity to shape the region's future.

6.2.3.1 Potential impact of the chosen strategy

From the perspective of the European Commission, the Highlands and Islands RITTS project was considered a 'study' project, not a regional innovation strategy. The possible options proposed for regional debate by the team of experts were discarded by both the project leader and Steering Committee and the final policy choice in Stage 2 was only marginally related to the evidence gathered in Stage 1.

With the exception of the new, primary data collected in Stage 1, the project leader and Steering Committee members considered the RITTS project of limited value in helping the region establish its long-standing university dream. What the RITTS project did demonstrate was the region's capability to win competitive bids and tailor EU-funded projects like RITTS to serve a new, imminent Scottish reality: a region with an enlarged portfolio of planning and programming powers.

The Highlands and Islands RITTS was an interesting example of a region whose core strategy for the future (its own university) was not considered key in what the Regional Innovation Systems literature prescribes in peripheral regions, but made a lot of sense to the regional community and enjoyed widespread support as the preferred way to shape the region's future. This also demonstrates the limits of the Regional Innovation Systems approach, which has been criticised for not being methodologically equipped for prospective analysis and for not being very helpful as a tool to those policy-makers who want to act as an agent of change.

From the perspective of the European Commission, the RITTS Neubrandenburg project was considered a serious attempt to design a regional innovation strategy in a consensual manner. Management-wise, the project leader did put in place all the necessary managerial conditions, but faced a number of obstacles that prevented a true regional debate from happening. The final 'regional innovation strategy' for which consensus and commitment could be achieved is, therefore, far from sufficient to achieve the conditions for future change. At the same time, undertaking 'innovation audits' in regional firms goes very much to the heart of the regional innovation *problématique* and is among the typical bottlenecks in peripheral regions highlighted in the academic literature.

For both project leaders and Steering Committee members, the actual workings of the RITTS project turned out differently than they had envisaged at the start of the project, albeit both for different reasons. For the RITTS Neubrandenburg project leader, the relevance of the former GDR legacy very much undermined the different, consensual approach in policy design advocated by RITTS. For the Steering Committee members, the information gathered by the experts on the region's innovation status was very confronting, including in terms of their own organisation.

6.2.3.2 Assessment of the organisation in charge

Although the RITTS Highlands and Islands project leader is an executive agency of central, London-based government, the organisation had a good standing in the region, had a serious budget at its disposal, and enjoyed a reputation for being pro-active, putting Scottish interests first. On the downside, as with all UK single-purpose, functional government organisations, the project leader faced a continuous struggle to acquire funds which tended to favour a short-term view (from project to project) at the detriment of a longer, strategic view. Within the RITTS context, the project leader was trusted as an organisation capable of directing relevant

projects towards a better future for the Highlands and Islands region. The fact that the Scotland Act was about to be adopted in Parliament intensified the feelings of being in charge of shaping the region's future.

The standing of the project leader in the RITTS Neubrandenburg region could not be more different. The organisation was one of 13 executive agencies of the Federal (not State) Ministry of Economic Affairs and Employment. Their mission was to implement the Ministry's regional economic policy objectives in the new German States following the country's reunification. The organisation was new in the institutional landscape of the first half of the 1990s and was expected to strengthen the innovation capacity of SMEs in the Neubrandenburg/Greifswald region. The organisation was not part of the region's 'consensual elite' and neither did it have privileged access to the most important innovation actor for the region, the State Ministry of Economic Affairs. Combined with its modest budget and staff resources, the project leader was not perceived by the other stakeholders as the most relevant organisation to shape the region's future.

6.2.3.3 Type of change induced in the region

If the final output of both RITTS projects was different from what the European Commission had envisaged with the RITTS programme, did participating in RITTS perhaps generate other outcomes? One of the features of the RITTS programme that was highly appreciated by both RITTS Neubrandenburg and RITTS Highlands and Islands was the emphasis on exchanging experiences with similar regions. Through the exchange with other RITTS regions and the mutual learning that took place within the RITTS network, both regions felt taken out of their peripheral isolation.

Participating in RITTS had a strong psychological effect on the Neubrandenburg region's self-awareness. It opened up a new way of relating to and involving stakeholders; it enabled the region to position itself in an EU framework; it helped regional actors to think about the region in more strategic terms.

For Highlands and Islands, RITTS participation brought in a more systemic, staged approach to policy design, which was particularly appreciated by the companies and research organisations being interviewed by the team of experts. It was felt that the ad hoc funds acquisition left little room for longer term policy reflection.

6.2.3.4 Capacity to shape the region's future

Participation in RITTS also revealed the strengths and weaknesses of the organisation in charge of running the project, the RITTS project leader. Despite being a new actor in the area of technology transfer and innovation support in the Neubrandenburg region, the project leader did a good job in managing the RITTS project vis-à-vis the European Commission, the team of experts and the regional companies being surveyed. In addition, the proactive networking with other German-speaking RITTS regions as a way to connect the region to larger frameworks of action and learning is to the project leader's credit. The difficulties of getting the regional stakeholders committed, involving the State Ministry, and transferring study results into a strategy for implementation were among the major weaknesses.

Within the quango-dominated landscape of the United Kingdom, the RITTS Highlands and Islands project leader was very experienced in acquiring resources (funds, projects, experts, and the like). RITTS was one of several projects being managed simultaneously by the

project leader. What is interesting is how these projects, each stemming from a different public intervention logic, were in effect executed in function of one overarching regional objective. Despite the criticism on the ad hoc nature of support, the RITTS project demonstrated how capable the project leader was at tailoring available support programmes to the longer term, strategic needs of the region. Among the organisation's weaknesses were the disinterest in administrative reporting requirements, in opening up the regional debate to a larger constituency (beyond the 'in-crowd'), and in moving from ad hoc solutions to more structural, systemic solutions.

6.2.4 Contextual level of governance quality: 'congruence'

At the fourth and highest-order level of governance, the contextual level, the issue is not so much about 'what job needs to be done', nor about 'how is the job to be done', nor about 'how sustainable is the 'what' and 'how' it's done'. The fourth-order quality level is at the meta-level and is about 'does it matter for the region', 'does it make sense for the region', is it 'the right action at the right time' for the region.

The contextual quality level is about 'congruence' in view of the region's identity and history. Good governance is one that is able to contextualise government and its actions in place and time, and being able to put policy 'in context'. The actions of government resonate through this congruence. Analysing the RITTS cases at the contextual level of governmental governance quality views the final policy choice in terms of how well it fits with and/or makes use of the different regional 'logics'.

Three indicators in the sense of 'analytical dimensions' are used to operationalise the fourth-order level of governance quality, the contextual level, as presented in chapter 3:
- ➢   Territorial demarcation
- ➢   Territorial identity
- ➢   Territorial institution.

6.2.4.1 Territorial demarcation

Viewing a region as a physical, topological place on the planet, RITTS Neubrandenburg is not affected by any extreme climatological conditions. RITTS Highlands and Islands, on the other hand, is very much subject to nature's will given its latitude. The Islands are only accessible by plane and ferry when weather conditions allow. Climatological conditions are therefore an accepted part of life and, vice versa, a force shaping the outlook on life itself.

The territorial demarcation of the Highlands and Islands region is permeated with history. It encompasses an area sharing a common language – Gaelic – and a shared history in their fight against outsiders such as the Vikings and the English. The region also endured homemade internal civil wars among competing clans before peace could be installed and maintained (Koch, 2006).

The Neubrandenburg region is very different. Being a predominantly agricultural region until recently, it often found itself at the mercy of the ruling lord, without any particular regional identity except for that of provider of food and forestry pleasures, such as hunting. Borders were altered unilaterally and randomly to suit the needs of new rulers, whether feudal lords or communist party bosses. Within the Mecklenburg-Vorpommern State – itself a merger of two previously separate regions – the Neubrandenburg region seems to be a mere footnote in the State's historic past.

6.2.4.2 Territorial identity

The difference in 'territorial identity' between these two RITTS regions – Neubrandenburg and Highlands and Islands – are striking. While being an 'ethnic original' from the Highlands and Islands – able to trace back one's family history to Viking times, so to speak – is a source of pride, the opposite seems to be the case for Neubrandenburg where a visitor in the early 1990s was struck by a regionally shared feeling that was close to apology. The 'territorial identity' logic is linked to a particular function of regional government, namely serving to express the people's demand for autonomy and to satisfy the region's heterogeneous preferences. Even viewed through the narrow prism of RITTS, this function is very pronounced for the Highlands and Islands region in their demand for establishing a regional university, and virtually absent from the Neubrandenburg region: a region seemingly 'lost in transition' at the time of RITTS.

At the start of the RITTS project, Highlands and Islands was the only Scottish region without a university of its own, although it had a long-standing wish for a university dating back to the 1830s (Hills & Lingard, 2004). What the London-based expert team did not grasp was how much the region's university dream went to the heart of Scottish identity. Within Scottish society, university education has always been perceived as desirable and 'a proper goal for all Scots', irrespective of social class (Hills &Lingard, 2004). It is no accident that Scotland is home to four of the oldest universities of Europe: St. Andrews (1411), Glasgow (1451), Aberdeen (1495) and Edinburgh (1582), which is remarkable given Scotland's relatively small population. The cultural importance of higher education in Scottish society is linked to the idea that the subjects taught and the methods of learning should be those that could be of use to the community. For this reason, medicine, law and engineering were subjects for which Scottish universities became renowned (Hills & Lingard, 2004)[34]. It also explains the project leader's insistence on setting up Research Trusts at the Further Education Colleges in areas of particular interest to the region in Stage 2.

6.2.4.3 Territorial institution

Both regions belong to distinct government systems generating a very different 'institutionalisation' of the region and its government. RITTS Neubrandenburg is part of the State Mecklenburg-Vorpommern, a region with substantial degrees of authoritative decision-making powers through a set of legislative and executive institutions at State level and an elected regional government. These institutional features were absent in RITTS Highlands and Islands at the time of the RITTS project in the mid-1990s.

Authoritative decision-making in the RITTS Highlands and Islands region was – at the time of investigation in this study – handled by a representative body of the UK central government, the Scottish Office. The responsibility for policy matters concerning technology transfer and innovation support lay with the Scottish Office. The RITTS Highlands and Islands project leader was the executive agency of the UK central government in charge of economic development for this part of Scotland. Through this 'functional' approach to regional

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[34] The fact that the four ancient Scottish universities had relatively small numbers of students, but produced a large number of "gifted scholars, authoritative works and inventions" (Hills & Lingard, 2004:3) illustrates the educational prowess of Scotland and is a source of Scottish pride. David Hume (A Treatise of Human Nature, 1740) and Adam Smith (An Inquiry into the Nature and Causes of The Wealth of Nations, 1776), for example, are both Scotsmen.

government, the project leader had a substantial budget and staff at its disposal to implement central government objectives. It is this same 'function' that provided the RITTS project leader with a considerable source of power and influence in the region, de facto enabling it to shape regional preferences. Viewing regions as territorial sub-divisions of power, literature assumes that regions in federal government systems, such as Germany, have advantages over highly centralised systems, such as the United Kingdom. However, reality is often less black and white, as this case shows.

The RITTS Neubrandenburg project leader was also a functional, single-purpose government actor established by government decision, albeit with a narrower mission, i.e. in charge of technology transfer in the region. Given the fact that the organisation was fairly new, had a small budget, with few staff and a limited number of tasks assigned to it, its power base in the region was limited, certainly when compared to both Chambers of Commerce (IHK and HWK). Being funded by the <u>Federal Ministry</u> of Economic Affairs and Employment (*Bundesministerium für Wirtschaft und Arbeit - BMWA*), based in Bonn, Nordrhein-Westfalen, put the project leader in a framework of super-ordinate governance. Although it is outside the scope of the data collected in this study, it seems that this position made it difficult for the project leader to establish links with the region's most important actor for designing and funding regional innovation policy: the <u>State Ministry</u> of Economic Affairs (*Ministerium für Wirtschaft, Arbeit und Tourismus*), based in Schwerin, Mecklenburg-Vorpommern. The five districts (*Landkreise*) and the two independent urban districts (*kreisfreie Städte*) – as democratically elected local governments and part of the Steering Committee – could *de jure* shape regional preferences, but lacked *de facto* the in-house capacities for authoritative decision-making in the area of innovation policy.

6.3 Old industrial RITTS regions Aachen and North East of England

6.3.1 Operational level of governance quality: 'responsiveness'

6.3.1.1 Regional innovation *problématique*

Whereas peripheral regions have few innovation-relevant elements with limited networking within and between both sub-systems of the regional innovation system, old industrial regions face the opposite problem. Both old industrial RITTS regions Aachen and North East of England are organisationally 'dense' regions. Aachen's knowledge generation and diffusion sub-system – the region's 'knowledge creators' – is made up of a multitude of renowned knowledge institutions such as the RWTH university, the polytechnic FH Aachen, public research centre KFA Jülich, and a whole set of private R&D institutes, vocational training institutes, and public sector technology transfer organisations.

The knowledge application and exploitation sub-system in the North East of England region – the region's 'knowledge users' – consists of large multinational companies with a multitude of supplier-user relationships with regional small and medium-sized enterprises, industrial clusters around mechanical and electrical engineering, chemical industry, food, drink, tobacco, and paper manufacturing, and service-sector clusters around retail and tourism.

Both regions share a long history of industrialisation based on coal and steel, which generated extended periods of economic prosperity before decline set in. Changing the focus of both sub-systems to a different direction turned out to be a difficult process, due to 'lock-

in' in its various forms. In both regions 'lock-in' materialised in, for example, the educational qualifications being predominantly 'technical', a lack of the skilled labour needed by the new sectors, the structural nature of the region's unemployment ('unemployability'), and the strong ties between public and private key players and among public key players.

Both regions had been carving a path out of the dominance of old industries and outdated technologies since the 1980s. In the case of the North East of England, by attracting foreign multinationals and creating employment in the expanding service and public sectors. In the case of Aachen, by exploiting the presence of the prestigious RWTH for regional development purposes through its teaching and training capacity, its research capacity, and its firm founding capacity. In both regions, it has resulted in a 'two-speed' situation where areas of successful reconversion, high-tech companies, R&D and innovation co-exist alongside pockets of poverty, structural unemployment and stagnation.

The demand analyses in both regions showed that, overall, companies' involvement in R&D was low, as was the involvement in collaborative partnerships between companies beyond a client-supplier relationship. The majority of companies in both regions employed cost-cutting strategies (such as automation and outsourcing) to stay competitive in an ever-globalising world; 'innovation' was at best regarded as 'additional'. The supply analyses in both regions revealed that public-funded technology transfer has had limited success, because the majority of SMEs lacked absorptive capacity and technology management skills. In addition, those companies that needed support in innovation and technology transfer most were not well served by the publicly funded ITT infrastructure, because their needs did not match the services on offer. In particular, smaller firms expressed a need for services based on strategic business needs ('demand-oriented') and specialist knowledge and expertise (not 'general' technology transfer services). Firms in the North East of England region criticised the nature of the support as too haphazard and not strategic enough, whereas firms in the Aachen region complained about the difficulty of identifying the right organisation among the many available.

6.3.1.2 Regional innovation policy strategy

Although both regions achieved an accurate and theory-conform problem definition, they differed vastly in their policy approach to tackle these deficiencies.

Aachen started by agreeing on the overarching strategic orientation, which was to renew the regional economy based on innovation-based competitiveness (as opposed to continuing with cost-cutting strategies). The policy mix of eight measures addressed the region's main innovation weaknesses exposed during Stage 1 and covered four of the six areas that theory suggests would make most sense to focus on in old industrial regions. These ranged from promoting inter-firm collaboration and cluster building, acquiring the new skills required in the region and improving risk financing for innovation, to increasing collaboration and cooperation among publicly funded ITT intermediary organisations, as well as setting up a monitoring and evaluation system to monitor changes in ITT provision.

The measures proposed in the North East of England were far more limited in comparison to Aachen in terms of scale, scope and ambition. The six 'priority areas for action' essentially covered one deficiency: the functioning of the intermediary ITT organisations. In addition, several measures either overlapped or were a repackaging of what was already agreed in RITS ('Regional Innovation and Technology Strategy'), the project that preceded RITTS.

What is striking is that both regions did not seem to recognise the system's 'lock-in' (or alternatively, it was not perceived as problematic). The question of how to upgrade the predominantly incremental and process-oriented innovations towards more radical and product-oriented ones was not posed. The focus remained firmly on the existing ITT infrastructure, existing sectors and existing areas of specialisation. Connecting the region to new industries, new technologies and new markets outside the region at national and international levels did not seem to be on the radar.

6.3.1.3 Implementation approach

Having the RITTS project culminate in the implementation of concrete measures was a management consideration shared by both project leaders. Although this emphasis was partly linked to the mission of both project leaders, who represented single-purpose, functional government organisations, its significance is, however, to be interpreted differently.

For Aachen, the project leader was genuinely interested in making a much needed change to the ITT infrastructure, to cater better for the large group of traditional, low-tech SMEs neglected so far and to help them upgrade their innovation skills. Being unable to operate from a hierarchical position vis-à-vis the public ITT organisations, the only way to make change happen was by committing them or their funding parent organisations to implementing the agreed measures. Getting them to commit became the objective of the RITTS project and their full involvement in all Stages of the RITTS policy process was perceived to be conditional to that end.

For North East of England, the motivation behind implementation was different. With only the organisation's core funding being provided for by central government, the project leader had to earn a considerable part of its income in the marketplace, in line with the Conservative government's views at the time. The RITTS project served a far more pragmatic, utilitarian purpose. Being one of many acquisitions in the project leader's portfolio, the RITTS project funded the implementation of RITS, the project that preceded RITTS which served to provide input and ideas for the next Single Programming Document (to obtain European regional funds (ERDF)). By the time the RITTS project reached Stage 3, five of the six suggested 'priority areas for action' were already in full implementation.

Contrary to RITTS North East of England, Stage 3 in RITTS Aachen turned out to be the most time and energy-consuming Stage of the whole RITTS project. Preparing the post-RITTS implementation phase involved more than just getting agreement in Stage 3 from all the Steering Committee members on where to 'house' the measures and how to fund them. It also meant finding ways to keep the RITTS Steering Committee alive post-RITTS, involving the State Ministry in charge of innovation policy, and devising appropriate indicators to monitor progress.

6.3.1.4 RITTS project management

As with most RITTS projects, including those in Aachen and the North East of England, the budget was modest and the majority of it was spent on external experts; other costs such as secretariat staff, infrastructure and meetings were covered in kind by the project leaders' organisation.

Both RITTS project leaders put in place a distribution of labour – 'who-does-what' – between project leader and expert team, and a Stage-differentiated reporting system to

inform the European Commission on the project's progress. The day-to-day management tasks were also similar in nature and covered: instructing the team of experts, chairing meetings with the project team, supervising the project's progress, performing the role of secretariat to the Steering Committee, and fulfilling the administrative requirements vis-à-vis the European Commission.

Once Stage 1 was achieved, however, the management style of both project leaders developed in opposite directions, as was the case with Neubrandenburg and Highlands and Islands. The RITTS Aachen project leader defined the project's success as making change happen (to the functioning of the regional ITT infrastructure) by implementing concrete measures, and the 'EU label' of RITTS was seen as facilitating to bring all the relevant parties together. North East of England's project leader defined the project's success in more prosaic terms of obtaining additional funds for the region, and getting 'direct access' to the European Commission. As a function of these different motivations to participate in the RITTS programme, the difference in management style is striking and can be labelled 'hands-on' (Aachen) versus 'hands-off' (North East of England).

In Aachen, as in Neubrandenburg, a lot of time and resources were dedicated to building consensus and every opportunity was used to neutralise criticism – in plenary meetings, in bilateral meetings, in Focus Groups, in official meetings, in informal gatherings, etc. This intense 'social engineering' (Landabaso & Reid, 1999) was considered necessary to ensure a successful Stage 3: that is, ending the RITTS project with a shared strategy that was operationalised through a series of measures and whose implementation was agreed by the responsible actors.

Very different, yet similar to RITTS Highlands and Islands, was the management approach taken in North East of England. The RITTS project leader continued to be the official representative of the region vis-à-vis the European Commission, but in practice, most of the daily management tasks were outsourced to another organisation as soon as Stage 1 was finished. The new de facto project leader (Regional Technology Centre North) decided to work with another team of consultants in Stage 2 on a different assignment considered more valuable to the region than the one RITTS prescribed for Stage 2. The final report in Stage 3 was a mere administrative formality and was produced without any involvement from the experts and without any debate with the Steering Committee.

6.3.2 Procedural level of governance quality: 'legitimacy'

6.3.2.1 Steering Committee

As with RITTS Highlands and Islands, the RITTS Aachen Steering Committee was small, but represented the major regional stakeholders whose room to manoeuvre and financial prowess were large and whose involvement was conditional for any change to happen in the region. The main role of the Steering Committee was to serve as the project's consensus-building forum. With the exception of the RWTH, none of the organisations that was the subject of half the measures agreed upon (four out of eight) was on the Steering Committee. Similar to RITTS Neubrandenburg, the Aachen region chose to work with the other stakeholders in smaller Focus Groups in Stages 2 and 3.

RITTS North East of England went about it differently and obtained the European Commission's approval to 're-use' the former RITS Steering Committee for this project. Having been established within another framework of objectives (that of European regional policy),

the Steering Committee was largely in line with EU Regional Policy rules. The Steering Committee represented all the regional stakeholders (*'la grande messe'*) and had a wide 'government' coverage, representing national government ministries and 'regionalised' national government institutions such as the Government Office in the North East, the Northern Development Corporation and the Regional Technology Centre North. Its main role was to give the RITTS project legitimacy, while ensuring that the strategic directions developed in the preceding RITS project were kept alive and were implemented.

6.3.2.2 Data collection

Typical for the mid-1990s was the lack of available and reliable data on companies' innovation performance at the regional level. Both project leaders, therefore, attached great importance to collecting new, primary data from enterprises by means of surveys, workshops and face-to-face interviews. The information was, however, used for different purposes. Whereas Aachen's project leader considered this objective fact-finding mission indispensable for the regional consensus-building process, the North East of England project leader saw the importance of these data inherent in the firms' feedback on the functioning of the ITT infrastructure and in the disclosure of what they considered useful public support. Both project leaders were aware that the efficiency of the public-funded ITT infrastructure (its value for public money) had to be increased. The option of being granted more public funds was unlikely to materialise in either region in the foreseeable future.

In RITTS Aachen, the team of experts were asked to undertake a separate demand-and-supply analysis in line with RITTS requirements. Not unlike RITTS Neubrandenburg, the project leader here was involved in an equally hands-on way in the research, although more procedural (in the set-up of the research) and less operational (in the actual data collection). In North East of England, on the other hand, no new supply analysis was undertaken in Stage 1, as the data were considered to be already available from the previous RITS project. These data were 're-used' within the RITTS context; a separate demand analysis among companies was, however, undertaken.

In RITTS Aachen, the 'who-does-what' division of labour between project leader, team of experts and Steering Committee was established at the start of the project, was well defined, and remained stable throughout the entire duration of the RITTS project. As in RITTS Neubrandenburg, the Steering Committee was perceived by both project leader and team of experts as a forum 'that needs to be convinced' of the region's serious, future-impacting innovation deficiencies. In order to succeed at this, a robust methodology that would generate data whose quality would be 'beyond reproach' was considered mandatory (which in turn generated many long meeting sessions between project leader and experts).

In RITTS North East of England, the relationship between project leader and experts was more one-directional, similar to RITTS Highlands and Islands. As soon as Stage 1 was over, the project leader started to 'disengage' from the RITTS project and the successor organisation redefined the activities of Stage 2 more in line with the perceived data needs of the region. Paying for external expertise was very much seen as obtaining access to experts' brains that were to be picked for the benefit of the region, such as collecting examples of 'best practice'. The RITTS Aachen project leader was interested in 'learning from peers' and was actively involved in the German RITTS group, similar to RITTS Neubrandenburg.

6.3.2.3 Consensus-building and decision-taking

The RITTS Aachen project leader knew that if any change was to follow from RITTS, it was crucial to have the Steering Committee members on board from the very start. 'Winning' their approval is an accurate description of the interaction between Steering Committee and project leader with 'his' team of experts throughout the RITTS project. Factual incorrectness, perceived or real, was seen not only as the experts' responsibility (the experts were greeted with considerable scepticism), but also as an error on the part of the project leader demonstrating poor project management qualities. With the organisation's reputation on the line, the project leader opted for a step-by-step approach to achieve consensus: a new task or next step could only happen if the previous one was agreed by the Steering Committee (which required plenty of formal and informal, plenary and bilateral meetings). This 'blessing-off' conditionality not only concerned content related matters, but also procedural issues such as the way to structure the finding-regional-consensus debate in Stage 2. Because this approach is labour-intense and time-consuming, the RITTS project lasted five months longer than originally planned (23 instead of 18 months).

Similar to RITTS Neubrandenburg, besides Steering Committee meetings, a new consensus-facilitating construct was added in Stage 2 in the form of Focus Groups (*Fokusgruppen*), and in Stage 3 in the form of Working Groups (*Arbeitskreise*). These Groups were set up to discuss issues in a smaller setting, under the assumption that it would be easier to achieve regional consensus and commitment, but the Steering Committee members approached them rather as 'quality-control' tools to assess the experts' proposals. The RITTS Aachen project leader played a crucial role in getting the regional actors to agree on and commit their organisation to the objectives and measures of the RITTS regional innovation strategy. The experts, particular the international ones, operated very much as 'assistant' to the project leader.

The consensus-building and decision-making process in RITTS North East of England did not have any of the 'diva-like' characteristics found in RITTS Aachen's Steering Committee. On the contrary, the two RITTS projects stood in sharp contrast to each other (in caricatural terms: from 'nothing but the best' to 'recycle as much as you can'). Faced with a laid-back Steering Committee, it was the RITTS project leader who *de facto* took the decisions. Without much debate, these decisions were agreed precipitously in Steering Committee meetings, with RITTS being just one of many points on the agenda.

In Stage 1, it was the project leader who decided to forego any new data collection other than the demand analysis, and to re-use relevant information recently collected in other projects such as RITS. This was approved by the Steering Committee without much debate. Whereas Stage 1 in RITTS Aachen took longer than expected, in RITTS North East of England, Stage 1 was carried out in less time and finished two months ahead of schedule. In order to structure the regional dialogue in Stage 2, the experts proposed organising 'issue-based workshops' similar to the German Focus Groups. However, both project leader and Steering Committee saw the situation differently, arguing that the current initiatives (under predecessor RITS) had to be given some time to bear fruition before engaging in a debate on new changes. To them, it made more sense to use the expert resources earmarked for Stage 2 to collect international 'best practices' and so that is what they decided. From Stage 2 onwards – having secured the Stage 1 information in the region's ERDF Single Programming Document, which had to list innovation projects to be funded from the Single Programming Budget (and the reason for finishing Stage 1 two months earlier) – both project leader and

Steering Committee redirected their attention to other projects. From Stage 2 onwards, Regional Technology Centre North, the organisation in charge of the Structural Funds Programme Secretariat, was now in charge of the daily RITTS project management endorsed by both project leader and Steering Committee.

6.3.2.4 Monitoring and evaluation

The Steering Committee members supported the idea of continuing in a RITTS Aachen 'afterlife'. In order to be able to monitor progress on the eight agreed policy measures post-RITTS, they asked the team of experts to set up a monitoring and evaluation system. With already more time than envisaged invested in Stage 3, the team of experts declined to develop a fully operational 'ready-to-go' system. Instead, they proposed a methodological framework that explained the different types of indicators, the corresponding data requirements, and the necessary institutional support. It would then be up to the organisations themselves to apply this framework to each organisation's specific situation. The RITTS Aachen project leader created eight Working Groups, one per measure. In each of these Working Groups, the experts' proposals were discussed, only to realise how different each regional organisation measured 'success'.

In RITTS North East of England, regional consensus considered that the 'strategy' already existed, resulting from the preceding RITS project with five out of six 'priority actions' already in full implementation. In Stage 3, the experts were asked to make a proposal and did develop a set of indicators, but its application was left at the discretion of each individual ITT organisation. As with other RITTS aspects in this project, the evaluation and monitoring work seemed more to serve formal reporting requirements set by the European Commission than a genuine attempt to develop a system of feedback and learning.

6.3.3 Constitutional level of governance quality: 'resilience'

6.3.3.1 Potential impact of the chosen strategy

As with RITTS Highlands and Islands, the European Commission considered the North East of England RITTS project more a 'study' project than a regional strategy development process. Having the European Commission agree on exploiting synergies with previous work such as RITS is different from using RITTS merely as a label to finance pre-designed and pre-approved actions. The likely impact of the chosen actions on regional change was low, their scope was narrow, and the majority of them were already being implemented to fulfil the requirements of a different European policy with different objectives. Admittedly, the small size of the RITTS project budget paled in comparison to the approximately 15 million pound sterling EU Structural Funds spent every year on innovation and technology support in the North East of England region in the early 1990s (NDC brochure, 1994).

Although the final output of the RITTS Aachen project was not a 'strategy' either, but a collection of measures, its likely impact scored higher compared to RITTS North East of England. What impressed the European Commission was the amount of hands-on management and intense 'social engineering' by the project leader to organise the regional debate and introduce the notion of innovation into the region's future thinking. The Steering Committee in RITTS Aachen represented the region's 'ruling elite', was very much aware of this, and took its role as decision-making forum very seriously. The likely impact of the chosen

strategy was in the rigorous methical approach imposed by the project leader. This made it possible to build a basis for discussing the region's future and for entrusting one another in shaping this future. The RITTS project provided a nudge to start thinking about the region's future in a different way: far less technology supply-driven and more innovation demand-driven. The Steering Committee members supported the idea of continuing this debate in an 'afterlife' of the RITTS project, and they endorsed the idea of transforming the RITTS Steering Committee into a sub-division of the existing Regional Conference dealing with technology transfer and innovation support (*Unterarbeitskreis des Arbeitsausschusses der Regional-konferenz*).

6.3.3.2 Assessment of the organisation in charge

Both project leaders were organisations that were perceived as being competent in their line of business, and both enjoyed a good standing in the region. AGIT, short for *Aachener Gesellschaft für Innovation und Technologietransfer mbH*, is the regional development agency founded in 1983 with a special focus on technology-oriented enterprises. AGIT started out as the Technology Centre of the city of Aachen and was the first Technology Centre established in Germany. With its impressive track record in technology start-ups, AGIT enjoys an excellent reputation, and even outside Germany AGIT has often been referred to as a 'best practice'. The organisation's solid reputation has been in no small part thanks to AGIT's longest-serving director, who managed the organisation competently and skilfully for a period of 18 years – from 1989 until his retirement in 2007.

NDC, short for *Northern Development Company*, is a single-purpose, functional regional government in charge of economic development and regional employment in the North of England. NDC was established in 1986 and attracting inward investment was the main avenue to achieving employment growth, as its predecessor, the North of England Development Council, had done exclusively for about 20 years. Between 1985 and 1997, the region managed to attract around 450 overseas companies (mainly Asian and EU), creating or safeguarding over 86,000 jobs totalling almost 8.7 billion pound sterling of investment (DG REGIO brochure, 1999:3-4). Samsung's 450 million pound sterling electronics complex was the largest Korean investment in the EU at the time (idem).

Despite this impressive foreign direct investment track record, which built the RITTS project leader's reputation in the region, the organisation was relatively small – in terms of core funding received from central government – compared to the development agencies in Scotland and Wales, or the Tyne and Wear Development Corporation (Hassink, 1992). The organisation had to obtain additional funding through funds acquisition in line with government policy at the time.

6.3.3.3 Type of change induced in the region

The exchange of experiences with other German regions (RITTS Aachen) and the collection of international 'best practices' (RITTS North East of England) were very much appreciated aspects of RITTS. Both old industrial regions were keen to see how other regions with similar problems approached the reconversion of their economy, and how RITTS was put to use in this context.

The final output of RITTS Aachen – albeit less ambitious than drafted in the RITTS contract – was a selection of measures that addressed core weaknesses of this old industrial

region's innovation system. Without the 'EU label' of the RITTS project, it would not have been possible – at that moment in time and with those regional stakeholders – to get agreement on those measures and start with their implementation. The RITTS project also helped to bring all relevant parties to the table, collectively prepare a position paper, and sign and send it off to the State Ministry dealing with the technology policy of Nordrhein-Westfalen (*Landesministerium für Wirtschaft, Mittelstand, Technologie und Verkehr* (*MWMTV*)). The RITTS project provided the setting for a regional debate and allowed participants to engage in a strategic thinking process amidst the everyday hustle and bustle.

Whether RITTS managed to induce any type of change in North East of England is not evidenced in this study. As regional enterprises had pointed out, any form of action was very much confined by the need to acquire funds, including the RITTS project itself. This set in place a short-term perspective and left little room for longer-term policy reflection. Whereas the 'international' aspect of RITTS was appreciated by taking the region out of its known setting, the extent to which the collected 'best practices' were used as input to revise current or reflect on future initiatives could not be established within the scope of this study. The RITTS' role seemed to be more indirect in the sense of providing input and ideas to other EU projects such as the European Regional Development Fund (ERDF).

6.3.3.4 Capacity to shape the region's future

As highlighted earlier, the RITTS project leaders of Aachen and North East of England could not have projected a more different image to an outside observer, and with it the image of their organisation. Managing a RITTS project was a taxing undertaking and could make or break the reputation of the organisation running it. The extent to which these organisations in charge of RITTS created the conditions for a robust, adaptable, sustainable regional innovation system capable of handling change surpassed, however, the objective of the RITTS programme. What can be said about the organisational capacity to shape the region's future is that, without the tenacity, project management skills and Machiavellian-like cleverness demonstrated by the RITTS Aachen project leader, it would have been hard to achieve regional consensus on the final output. It confirmed the organisation's solid reputation and its capacity to contribute decisively to shaping the region's future. The difficulty in actively involving the State Ministry dealing with the technology policy of Nordrhein-Westfalen during the duration of the RITTS project is a surprising weakness.

Like RITTS Highlands and Islands, the organisation in charge of RITTS North East of England was very experienced in acquiring resources (funds, projects, enterprises, experts, and the like), and very successful at it. In addition, the organisation proved its worth in attracting direct investment from abroad and building up a previously non-existing service sector centred on retail and tourism. Also similar to RITTS Highlands and Islands are the weaknesses concerning the disinterest in administrative reporting requirements, in organising a genuine regional debate, and in moving from ad hoc solutions to more structural, systemic solutions. The RITTS project demonstrated a contributing capacity to shape the region's future present in both project leaders' organisations, albeit a very different one.

6.3.4 Contextual level of governance quality: 'congruence'

6.3.4.1 Territorial demarcation

In terms of physical, territorial demarcation, the Aachen RITTS region is situated in the south-western part of Germany's largest and most industrialised State, the Nordrhein-Westfalen State, and borders with Belgium and the Netherlands. Given its geographical location in the far western corner of Germany, cross-border commuting is a familiar phenomenon in the greater Aachen region. At the time of the RITTS project, an estimated 8,000 commuters came from the surrounding countries Netherlands and Belgium to work in Aachen, whereas 2% of the greater Aachen workforce commuted daily to work in the Dutch and Belgian part of the *Euregio Maas-Rhein* as the cross-border region is referred to (RITTS 038 Stage 1 report, 1995). This Euregio – of which the Aachen *Region* was one of the founding members in 1976 – became a cross-border legal entity in its own right in 1991. The four main cities in the Euregio founded their own cross-border cooperation agreement known as MHAL (Maastricht, Hasselt, Aachen, and Liège). The universities based in those cities also signed a mutual agreement favouring closer cross-border cooperation.

In terms of physical, territorial demarcation, the RITTS North East of England is situated in the north-eastern part of England, bordering in the north with Scotland, to the east with the North Sea, to the west with rural Cumbria, and to the south with equally rural Yorkshire. The Romans managed to occupy this part of the world and built Hadrian's Wall – to this day a well-known tourist attraction in the region. The North East of England is a diverse region with attractive countryside in predominantly rural counties such as Durham and Northumberland as well as coastal beauty. Impressive castles in the east alternate with large industrial conurbations considered as one of the cradles of the Industrial Revolution in the 19th century, such as Teesside, and Tyne and Wear – home to the region's principle city Newcastle upon Tyne (Wikipedia).

6.3.4.2 Territorial identity

Both regions are characterised by strong territorial identities. Within RITTS Aachen, the city of Aachen has a strong, shared 'historic' awareness and its identity can be traced back to Roman times. RITTS North East of England has a strong 'working class' identity similar to Aachen's hinterland, in both cases linked to their industrial past.

The economic differences between *Kreis* and *kreisfreie Stadt* Aachen on the one hand and its neighbouring districts, *Kreise* Euskirchen, Düren and Heinsberg on the other, are not a recent phenomenon, but have developed historically. The hinterland was always rural, until the discovery of coal led to rapid industrialisation. The city of Aachen on the other hand has a rich and tumultuous history and the locals – the *Oecher* – are very proud of their city's past. The *Carolus Thermen*, a large public spa, wellness and rehabilitation area (up to 40,000 users a month[35]) goes back to Roman times, some 2,000 years ago, when the thermal spa was built around the sulphide spring in the first half of the first century. In the Holy Roman Empire, Aachen was a Free Imperial City (*Freie Reichsstadt*) and witnessed, over a period of 500 years, the coronation of 33 German Kings between 936 and 1531. *Stadt* Aachen was part of Napoleon's First French Empire, and was incorporated into the Kingdom of Prussia in 1815

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[35] https://www.aachener-nachrichten.de/lokales/aachen/sprudelnde-besucherzahlen-carolus-therme-feiert-neue-rekorde_aid-32114027 (published 27 Dec 2002) accessed 1 Nov 2018.

after the Napoleonic Wars. The city was heavily damaged in World War II during the prolonged Battle of Aachen in autumn 1944, but the Aachen Cathedral was spared. The Cathedral – built between 796 and 804 – was the first German monument to be put on the UNESCO World Heritage Site list in 1978 and it is here that Charlemagne, King of the Franks, was buried (814). Each year, the city of Aachen hands out the prestigious Charlemagne prize to those who have contributed to Europe's integration. The RWTH – Germany's largest technical university, founded in 1870 – has achieved the status of worship as a 'cathedral of knowledge' and there seems to be something typically 'Aachen' about it that defines its success.

Notwithstanding its rural areas, the North East of England is mostly associated with the extraction, production and distribution of coal, iron and steel, which was concentrated in specific localities in the region and gave rise to distinctive patterns of sub-regional specialisation. The region's specific economic structure also generated a distinctive social structure, which in turn reinforced the region's industrial dominance. The population was mainly working class and solidarity among working class members was high. Places of employment were heavily unionised. Gender divisions of labour were rigidly enforced, but child labour was accepted practice. The fact that the middle class was virtually absent in the region meant that only a few indigenous firms came into existence (RITTS 040 Stage 1 report, 1995). Although the region's economic structure has been undergoing dramatic changes since the 1980s, the legacy of two centuries of industrial supremacy is still noticeable today. The locals are proud of their shared working class past, and with it their shared culture ('way of life'). An economy where 'salaried' employment has been the norm for so long does not trigger entrepreneurial behaviour and risk-taking attitudes. At the time of the RITTS project, the North East of England region demonstrated a low propensity for self-employment and, as a result, a low level of company formation. The FDI strategy pursued by the regional government – attracting subsidiary plants of multinational companies to the region – fitted seamlessly into the region's socio-cultural fabric. As with the RWTH, there is something about this region that made a foreign direct-investment strategy the right one given the regional context, and it became successful because of that.

6.3.4.3 Territorial institution

Both project leaders are functional, single-purpose government actors established by government decision and with a mission in regional development. In both cases, authoritative decision-making was taken care of by other organisations. In the case of RITTS Aachen, that was the State Ministry of Economic Affairs, Technology and Transport (*Landesministerium für Wirtschaft, Mittelstand, Technologie und Verkehr* (*MWMTV*)) based in Düsseldorf, Nordrhein-Westfalen. In the case of RITTS North East of England, that was the Government Office for the North East, representing central government departments in the region, based in Newcastle upon Tyne.

An interesting similarity between the German RITTS regions Aachen and Neubrandenburg is that they were both aware of the importance of involving their respective State Ministry, but had difficulty in doing so during the RITTS project. They each engaged in alternative ways of linking up (multi-level governance): Aachen by preparing a joint position paper to have a voice in the Ministry-initiated political debate about the State's future technology policy, and Neubrandenburg by preparing a RITTS follow-up funding proposal to obtain European regional funds, which they negotiated with the State Ministry of Economic Affairs, based in Schwerin, Mecklenburg-Vorpommern.

An interesting difference between the UK RITTS regions Highlands and Islands and North East of England is that despite both project leaders being functional government organisations with a central-government mission, they interpreted their role in the region differently. The Highlands and Islands project leader saw itself as being 'one of the locals' and its role as helping to position the region within Scotland, within the UK, and within the EU. In the region's pursuit of a university of its own, it engaged in making others outside the region (national government included) see the world as the region saw it. The North East of England project leader, on the other hand, applied much more a public service delivery approach in its organisational logic. It engaged (and succeeded) in 'selling' the region to corporate decision-makers in the UK, Europe and even further internationally in the best possible light.

6.4 Metropolitan RITTS regions Hamburg and South Coast Metropole

6.4.1 Operational level of governance quality: 'responsiveness'

6.4.1.1 Regional innovation *problématique*

Hamburg – at the time of the RITTS project – was practically a textbook example of the 'fragmentation' that theory considers characteristic for metropolitan innovation systems, with little inter-actor networks and interactive learning, and little trust. The Hamburg region of 1.7 million inhabitants is institutionally 'dense', well endowed with four universities, several polytechnics, multiple public and private research institutes, and over 20 technology transfer organisations.

However, the publicly funded ITT support infrastructure suffered from a built-in bias related to the nature of organisational funding. This triggered among technology transfer organisations fierce competition for clients, a preference for targeting the same clients, duplication in providing similar services, refraining from referrals between knowledge support organisations, and refraining from networking with renowned public research institutes located in the region (such as the Helmholtz Research Centres).

There was also a surplus of vastly different working procedures tailored towards the needs of each individual TT organisation, but not to the needs of companies ignoring their time investment required to satisfy these administrative procedures. Unlike some regions, Hamburg companies seemed to be quite well informed on the external knowledge input they needed to face increasing global competition, but the system was not capable of providing this, being too focused on itself.

Not only did the Stage 1 research confirm the fragmented nature of the Hamburg technology transfer system, the degree of fragmentation found was so high that the team of experts labelled the system 'technology transfer hostile'. Instead of helping companies, it actually hindered the innovation capacity of Hamburg businesses. Given that company investments in R&D and innovation were already below average compared to other German regions at the time of the RITTS project, there was no time to lose to 'shape up' the system (RITTS 033 Stage 1 report 1995).

The innovation system of South Coast Metropole region at the time of the RITTS project shared the story of 'fragmentation', although it is as much a territorial as an organisational form of fragmentation. The South Coast Metropole region is a multi-node region, consisting of four medium-sized cities and an island off the coast, totalling 1.1 million inhabitants at the time of the RITTS project. This loose union of five local authorities on

England's South Coast formed a partnership to embody and defend the region's common economic interests, transcending local territorial rivalries. Similar to Hamburg, the region is well endowed with three universities, several Colleges of Further Education, renowned research centres excelling in materials, mechanical engineering and oceanography, and over 70 knowledge-support organisations that all claimed to provide companies with research and technical services.

Like Hamburg, the way in which the technology transfer organisations were funded triggered specific types of behaviour that was not conducive to innovation. Nearly two-thirds of the surveyed companies (64%) located in the South Coast Metropole region considered that better support could assist their business growth. According to the team of experts, improving the technology transfer function would entail the following: perceiving the region as one innovation system instead of five; establishing a better match between companies' demand for public supply of technology transfer services; having technology transfer organisations work according to a more strategic orientation; employing more staff at those organisations; and putting more sustainable public funding in place for those organisations.

The team of experts pointed out that if the technology transfer function were to address these issues, it would be possible in 90% of the cases to help regional companies find the knowledge they needed within the South Coast Metropole region. With this new knowledge, they would be able to move up the value chain, produce better quality, become more innovative, conquer new markets, increase corporate revenue and generate more economic growth for the region.

6.4.1.2 Regional innovation policy strategy

Whereas trust, or the absence of it, was considered to play an important part in the sub-optimal performance of the Hamburg metropolitan innovation system, it was the South Coast Metropole innovation system's lack of direction that was considered to be hindering the region's innovation potential. Both regions came up with accurate and targeted measures to tackle the system's fragmentation.

Hamburg decided to implement a new technology transfer concept that centred on two changes. The first was a change in funding modalities of those technology transfer organisations funded by the RITTS project leader. They would receive up to a fixed amount of core funding per year to be matched with market-generated income (the Anglo-Saxon approach). The second change was the creation of the Hamburg Technology Foundation (*Technologiestiftung Hamburg*) as the new central ITT coordinating body, replacing the unsuccessful ATF (*Arbeitskreis Technologieförderung*). The Foundation was endowed with an initial capital of 100 million deutschmarks (equivalent to approximately 50 million euro, 1996 prices) to initiate public tendering of innovation projects to be undertaken by Hamburg firms in partnership with Hamburg knowledge institutions and intermediary technology organisations.

In South Coast Metropole, five 'key actions' were at the heart of 'the overarching framework' and served to ensure that all public sector activities in the area of technology transfer and innovation support were co-ordinated in the region, not unlike the 'new technology transfer concept' in Hamburg. The constraints to innovation that were prioritised by the surveyed companies in Stage 2 of the RITTS project formed the basis for the actions proposed. The measures tackled companies' concerns: making better use of the internet as a search-and-find referral system for research and technology transfer resources; setting up a

meta-database linking all existing, individual databases to improve access to business-relevant regional data; creation of a 'Technology Development Unit' at Business Link employing 'technology business managers' to provide firms with tailored help in product development and product upgrading. The measures also tackled two more systemic aspects, namely setting up a 'Sector Focus Programme' to develop clusters related to the region's knowledge base, starting with the marine sector becoming a European marine pole of excellence; and the creation of a regional fund (similar to Hamburg's Technology Foundation) to be endowed with one million pounds sterling (equivalent to approximately 1.5 million euro, 1996 prices) giving firms easier access to grant funding for innovation-related activities (prototype development, and the like).

6.4.1.3 Implementation approach

Both metropolitan regions very much wanted the RITTS project to culminate in real proposals for change. What made Hamburg stand out as a remarkable RITTS project was the fact that the changes to the Hamburg technology transfer system were prepared, discussed, decided upon, funded and implemented within the 20-month lifespan of the RITTS project. None of the other 72 RITTS projects demonstrated so much 'implementation power' from idea to concept to policy delivery in such a short amount of time. The fact that this RITTS project – managed by the Hamburg administration – enjoyed the full political support of both the Hamburg government (*Hamburger Bürgerschaft*) and the Hamburg Parliament (*Hamburger Senat*) throughout the duration of RITTS was conducive to achieving this. Equally favourable was the fact that the Hamburg administration – in order to serve the State government – could make use of its vast planning, programming, legislation, taxation and funding powers (which it did). As of budgetary year (*Haushaltsjahr*) 1996, the year in which the RITTS project ended, a change in public funding kicked off for three major technology transfer organisations. The political decision to create the *Technologiestiftung Hamburg* was taken by the Senate, and the amount of the Foundation's financial capital was endorsed in the spring of 1996, which is during the RITTS project's lifetime.

Change was also what motivated South Coast Metropole to submit a RITTS proposal. Whereas Hamburg managed to progress at every RITTS project Stage in an almost linear fashion, the *parcours* of South Coast Metropole was far more chaotic. To an outside observer, the final outcome of the RITTS project nevertheless comes across as more genuine, less 'pre-conceived' than in Hamburg, and with regional consensus evolving organically. The downside was that the final output of the RITTS project did not advance much beyond regional stakeholders agreeing on this 'idea about change', not on the change itself as in Hamburg. The Final Report sent to the European Commission was very frank in admitting that what was still required was "extensive discussion among the wider range of public sector organisations involved to agree on the scope, organisational structure, funding and responsibilities for the actions" (RITTS 032 Final Report, 1997:62). In Stage 3, the team of experts came up with two proposals for a RITTS afterlife. Firstly, for better region-wide coverage, the team of experts proposed that South Coast Metropole Partnership should expand its membership with the Business Links of Hampshire, Dorset, and Isle of Wight, the Training and Enterprise Councils (TECs), the two regional councils of South West and South East region, and representatives of industry and small businesses. Secondly, the team of experts proposed establishing a regional forum similar to the *Unterarbeitskreis des Arbeitsausschusses der Regionalkonferenz* set up in Aachen. This forum was to discuss and agree on all operational aspects required to deliver on

each of these five key actions by each of the actions' corresponding organisations. Progress was to be monitored by the enlarged South Coast Metropole Partnership.

6.4.1.4 RITTS project management

In both regions, the team of experts were chosen from the European Commission list of RITTS-approved consultancies and their expenses made up the majority of the budget. In RITTS Hamburg, the distribution of labour between project leader and team of experts was similar in task description to the other RITTS cases in this study. What was different, though, was the role of the German lead expert who not only coordinated the other experts and the research work, but was increasingly assigned project management tasks, such as acting as the secretariat to the Steering Committee. The political pressure put on the RITTS project leader to deliver tangible change at the end of the RITTS project was such that the German lead expert became a *de facto* extension of the Ministry and was hands-on involved in drafting the legislation to set up the Hamburg Technology Foundation.

The working relationship between the team of experts in South Coast Metropole and the RITTS project leader was far more distant. The project leader's team was not newly created for the purpose of RITTS, but existed already as the secretariat to the South Coast Metropole Partnership. Similar to RITTS North East of England, the project team was 're-used' and the day-to-day management tasks of RITTS were merely added to its job. This particular project management set-up, combined with the Partnership secretariat already being understaffed and subjected to temporary cutbacks in funding, turned out to be at odds with being able to produce the RITTS deliverables on time. The contract was signed in December 1994, but the project had to be put on hold at various moments in time. The Stage 1 report, expected in spring 1996, was eventually delivered in December 1996; the Final report in July 1997. The RITTS project suffered a seven-month delay and the journey to deliver the final outcome was very much 'stop-and-go' (this 'staccato' style stood in sharp contrast with Hamburg's 'oiled-machine' delivery).

6.4.2 Procedural level of governance quality: 'legitimacy'

6.4.2.1 Steering Committee

The RITTS Hamburg project leader decided to forego setting up a formal RITTS Steering Committee and established a so-called Project Steering Team (*Projektsteuerteam*) incorporating both the function of RITTS project management and decision-making forum on behalf of the region. The argumentation given to the European Commission for not having a formal Steering Committee was that the Project Steering Team already involved the two key players that could take decisions and implement them, namely the Ministry of Economic Affairs (*Wirtschaftsbehörde, WIB*) and the Ministry of Science and Research (*Behörde für Wissenschaft und Forschung, BWF*), and both actors enjoyed full political backing. As with RITTS Aachen, the Steering Committee was very much defined in terms of involving those organisations and individuals whose support was considered crucial for any change to happen.

The Steering Committee of RITTS South Coast Metropole was considerably larger and its membership more varied, with the five local authorities that made up the South Coast Metropole Partnership, the region's two Training and Enterprise Councils (TECs), as well as representatives of various research associations, the financial sector and local businesses.

Despite the larger composition of the RITTS South Coast Metropole Steering Committee – compared to RITTS Hamburg – none of the many technology transfer organisations was represented nor any of the region's three universities (Bournemouth, Portsmouth, Southampton) and Further Colleges of Education – similar to RITTS Hamburg.

6.4.2.2 Data collection

In RITTS Hamburg, the team of experts were instructed to collect data in Stage 1 that would be 'as complete as possible' and to use a mix of research techniques (desk research, postal survey, interviews, on-site visits, etc.) to ensure that the data would be 'as factual as possible'. The reasons for the project leader to insist on this were two-fold. Firstly, as was the case for most regions at the time, hardly any regionalised data existed on Hamburg companies, nor any objective performance information on the technology transfer organisations in the region. The RITTS project offered the Ministry the opportunity to engage in a first, region-wide data-gathering exercise under the auspices of the European Commission and to establish some level of objectivity on the status quo. Secondly, and similar to RITTS Aachen, the quality of the data had to be uncontested in order for it to function as the evidence base for discussion and decision-making. Far stronger than the case in Aachen was the resistance by the region's technology transfer organisations, who interpreted RITTS as an audit exercise in disguise by the funding Ministry of Economic Affairs with the primary aim of establishing who would continue to receive public funding and who would not.

Similar to Hamburg, the South Coast Metropole Partnership was given the political mission of realising regional potential within a 'funds-limited' environment. Both regions went about it differently, however, starting with the data collection. In Hamburg, the data collection centred on the technology transfer infrastructure to investigate the perceived underperformance of the publicly-funded ITT infrastructure. In South Coast Metropole, the data collection was approached from the other side, the demand side. In order to address the region's declining industrial base (such as the military defence sector) and the danger of over-reliance on tourism, the answer was sought in upgrading the innovation potential of local firms. As a result, the data collection centred on the innovation needs of companies, mainly SMEs. Although the data collection was not as elaborate as in Hamburg, the survey response rate of 52% was the highest of all six RITTS cases investigated in this study (and it is telling how much interest the topic generated among companies).

6.4.2.3 Consensus-building and decision-taking

Months ahead of the official signing of the contract, when the details of the RITTS project work programme were still being discussed with the European Commission, the RITTS Hamburg project leader organised a big Kick-Off conference (July 1994) announcing the start of RITTS Hamburg and bringing together all the technology transfer and innovation support organisations, public research organisations and political decision-makers. The purpose was to 'test the water', but the antagonism with which the RITTS project was greeted was far greater than anticipated, prompting the project leader's decision to work with a small and 'pro-change' Steering Committee (which still left plenty of scope for disagreement as it later transpired).

The purpose of Stage 1 was to get the regional stakeholders to accept the research results as a basis for discussion to develop a new concept (*'ein Sollkonzept')* for Hamburg's

future technology transfer system. The thorough, methodical, comprehensive data collection and the factual explanations given by this team of EU-shortlisted, 'not-from-Hamburg' RITTS experts made it very difficult for the regional stakeholders to dismiss the data and hence the – for them – disturbing results. And so the majority of them agreed, albeit hesitantly, on the need for change.

The consensus-building process in Stages 2 and 3 was organised in bilateral settings between project leader, assisted by the lead German consultant, and individual technology transfer organisations. Stage 2 managed to deliver consensus on the two guiding principles of the reform ('a more efficient use' of scarce public funds 'used more effectively'), but was less successful in getting the regional stakeholders to agree on the 20 measures proposed to achieve this. The bilateral meetings in Stage 2 had laid bare the strong forces resisting change to the status quo. And so the idea of moving forward in Stage 3 with finding agreement on the implementation of the 20 proposed measures (the 'who-will-do-what-when-how' discussion) was put aside.

In view of increasing political pressure exerted by both the Hamburg Government (*Hamburger Bürgerschaft*) and Parliament (*Hamburger Senat*) to finish the RITTS project with tangible output, the project leader decided to focus Stage 3 on accomplishing three tasks. These were: to change the public funding modalities of three technology transfer organisations funded by the project leader; to create a single, central ITT coordinating body to improve technology transfer cooperation and inter-organisation referrals; and to devise an evaluation and monitoring system that would allow assessment of the performance of this new technology transfer system. The project leader managed to achieve all three tasks within the lifetime of the RITTS project, although the consensus-building process was less a dialogue based on 'exchange and participation' than a monologue in order to 'get them to agree' to the proposed changes. Change was presented as 'unavoidable' and the three tasks as a 'political decision from above'.

In RITTS South Coast Metropole, the Stage 1 report was submitted in December 1996, two years after the official contract signature date, and during that time, the involvement of the Steering Committee had been 'few and far between'. Whereas RITTS Hamburg had launched the Stage 1 work five months ahead of the official project start (July 1994), the RITTS South Coast Metropole project experienced a seven-month delayed start of Stage 1 (July 1995). The delay was not caused by the research work being contested – the Steering Committee agreed with the research results – but was due to organisational issues of staffing and funding at the project leader's end.

 With the appointment of a new person to take care of the RITTS project management at Poole Borough Council in Stage 2 and the matched funding for the rest of the RITTS project confirmed, the remaining seven months (January - July 1997) demonstrated more progress than the whole of the previous two years. The momentum was finally present, and there was a shared feeling of urgency to deliver change (or at least some concrete measures), after a long period of slow progress, low commitment and financial uncertainty. Similar to the other two UK RITTS regions investigated in this study, the interaction with the Steering Committee was such that the experts were seen 'to be paid to deliver a report' which was then 'to be dismissed or approved' by the commissioning organisation.

Unlike the other two UK regions, this project leader and this Steering Committee were keen to learn from companies what they considered to be innovation barriers typical for the South Coast Metropole region. In early May 1997, a two-day event took place where Steering Committee members, regional companies and other regional stakeholders met in a workshop

setting to discuss the proposed innovation strategy. Later that month, a Steering Committee meeting was held and its members consented to five 'key actions'. In June 1997, a Follow-up Seminar to the early May workshop was organised to discuss the proposed regional strategy with invited regional companies. The RITTS project ended with agreement on the final output in Stage 3, but without agreement on the implementation modalities for these five 'key actions'.

6.4.2.4 Monitoring and evaluation

One of the compulsory aspects of the RITTS programme was for each RITTS project to devise a monitoring and evaluation system to track the follow-up and progress on the changes proposed. The Hamburg project leader embraced this idea wholeheartedly, but did not participate in any of the meetings with ITT organisations in Stage 3, in order to keep the focus of the discussion on the 'technical feasibility' of a new evaluation and monitoring system instead of its 'political desirability'. Nevertheless, the technology transfer and innovation support organisations asked the project leader to clarify which political goals were to be achieved and to help them translate objectives such as 'reinforce the competitiveness of industry' into measurable indicators. No solution was found within the lifetime of RITTS. Therefore, Stage 3 ended with an agreement to set up a Working Group (*Arbeitskreis*) in the near future to design a new monitoring and evaluation system.

In South Coast Metropole, the RITTS project ended without agreement on the implementation of the five 'key actions' endorsed. The team of experts proposed establishing a regional forum 'for agreement of objectives, resources and allocation of responsibilities' (RITTS 032 Final Report, 1997:34), similar to the *Unterarbeitskreis des Arbeitsausschusses der Regionalkonferenz* set up in RITTS Aachen. The forum would be an executive meeting, set up to discuss and agree on scope, funding and responsibility for the five measures, and to closely monitor progress and evaluate achievements. For each of the proposed actions, the team of experts proposed a broad-brush monitoring and evaluation approach, including tentative targets per action, to be further detailed post-RITTS. The South Coast Metropole Partnership was to monitor progress; in order to be able to do so in a for the region meaningful way, the team of experts had recommended to expand the regional coverage of the Partnership's membership.

6.4.3 Constitutional level of governance quality: 'resilience'

6.4.3.1 Potential impact of the chosen strategy

Unlike the two other UK RITTS regions, RITTS South Coast Metropole was much more than a 'study' project and displayed a genuine appetite for change. The project had set out with two general ideas in mind. Firstly, to encourage 'innovation' as a way to diversify the defence and marine-based 'old' economy and counter-balance the increasing over-reliance on tourism. Secondly, to 'use' the region's position as a transport and transit hub to tap into new markets across the Channel in continental Europe as an avenue to future development. The second idea did not materialise, but the first idea did.

The five 'key actions' emerged from what small and medium-sized companies had told the team of experts they experienced as major innovation hurdles, being located in this region. Each of the five 'key actions' addressed some aspect of 'fragmentation' as they set out to

achieve a better connected and more inter-linked regional innovation system. The downside was that the RITTS project ended without firm commitments on the actual implementation. Although it is beyond the scope of this study, such a situation does not bode well for generating actual results, let alone longer-term impact; even more so, given that the South Coast Metropole Partnership lacked the decision-making power and budgetary means to turn words into action.

Hamburg – by contrast – was at the other end of the spectrum. Before the year in which the RITTS project ended was over, both measures were a reality, and the agreed changes had already been implemented. The measures taken were very much within the decision-making sphere and within the budgetary powers of the project leader, the State Ministry of Economic Affairs. They were proof of the change that the Hamburg policy-makers wanted to deliver, and the results might even have generated an impact beyond the immediate RITTS project. However, the extent to which these measures addressed the innovation barriers characteristic of the Hamburg innovation system is another matter. The South Coast Metropole innovation system was fragmented due to the geographical make-up of the region, but the Hamburg system was fragmented due to a lack of trust. Competition among the many public-funded technology transfer organisations was fierce, referrals between these organisations rarely happened, and companies' innovation needs went unmet. It is questionable how these two measures alone could instil a culture of trust and make the system more inclusive, cooperative and consensual (or at least less competitive, conflictual, and counterproductive).

6.4.3.2 Assessment of the organisation in charge

Whereas the previous four RITTS cases in this study were represented by functional, single-purpose regional government organisations, both metropolitan RITTS projects were represented by territorial, general-purpose ones. RITTS Hamburg was run by a department within the regional government administration, the State Ministry of Economic Affairs. RITTS South Coast Metropole was represented at the local government level by Poole Borough Council. The RITTS project was run by the South Coast Metropole Partnership whose secretariat was housed at the Poole local government office. Although both RITTS project leaders were administrations serving an elected territorial government, they differed considerably in institutional capacities and constitutional competencies.

The RITTS Hamburg project leader had a large toolkit of policy instruments at its disposal: taxation, legislation, policy design, programme funding, inter-ministerial coordination, auditing, monitoring and evaluation, etc. This allowed the Ministry to intervene in many different ways, including creating or abolishing publicly funded technology transfer organisations. The Ministry could rely on highly educated, experienced staff at the administration's departments and had earmarked budget posts at its disposal to fund both staff resources as well as programmes and policies continuously.

The South Coast Metropole Partnership, on the other hand, was a voluntary partnership of five local authorities on England's South coast. It was a new organisation created one year prior to RITTS, with its secretariat s housed at Poole Borough Council. Not only was the secretariat permanently understaffed, the staff they had were 'on loan', seconded from Poole Borough Council and other member organisations represented on the Partnership's Board. As demonstrated by the RITTS project, neither staffing nor funding were a given for the Partnership and temporarily suspension of either caused considerable delays in the RITTS

project. The Partnership saw its main role as bringing together regional stakeholders and designing an overarching regional innovation strategy that would position the South Coast in a European context and would help unleash the region's potential. The RITTS project was among the first projects that the South Coast Metropole Partnership had managed to acquire and was interpreted by some stakeholders as a 'test' of the Partnership's implementation power.

6.4.3.3 Type of change induced in the region

Not so much a regional innovation 'strategy', but more a collection of measures and actions is what both metropolitan RITTS regions delivered at the end of their RITTS project. The measures and actions agreed upon were the result of a compromise between the regional change that was sought and what regional consensus allowed for. Taking into account the difficult context at which change was directed, one could argue that both projects succeeded in getting 'change' accepted as a subject of political discussion.

Using RITTS as a way to start a process of 'change' is what both regions had in mind with RITTS, although different types of change were envisaged. In Hamburg, the Ministry of Economic Affairs had been the 'founding (and funding) father' of many of the technology transfer organisations some fifteen years prior to RITTS. Up until then, no comprehensive evaluation of the performance of these organisations had been undertaken. RITTS was seen as an opportunity to establish a shared evidence base where stakeholders would be involved in the data collection process itself. Not only did RITTS succeed in this, the research results were translated into concrete measures and their implementation was operational shortly after. The type of change induced was very real, very operational and very measurable.

A far more strategic type of change is what the South Coast Metropole Partnership had in mind when submitting their RITTS proposal. Representing the region's common economic interests, positioning the region in a wider national and international context, and exploiting opportunities for development (Bobe & Shurmer-Smith, 2007) were central objectives of the Partnership, and RITTS was seen as instrumental in contributing to these aims. Compared to this benchmark, the actual change that happened in RITTS – a joint reflection process among stakeholders on the region's future, resulting in concrete proposals for action – seems small. However, to call it insignificant would not do justice to the context at the time. Unlike the Hamburg situation, where the ITT infrastructure was very well established, the South Coast Metropole region was still very much in the process of creating and reinforcing this public service provision. Business interface organisations such as Dorset Business Link were new, or in the process of being established such as Hampshire Business Link. Two of the three universities in the South Coast Metropole region had just changed from Polytechnic status to University status. In addition, innovation brokers such as Liaison Offices had just come into existence at all three universities. To already envision this economically inter-linked region developing a distinctive regional identity that would carry national importance in its own right, was strategic behaviour. To see the need to match this vision with an appropriate and facilitating governance framework – the South Coast Metropole Partnership of four individual cities and one island – was nothing short of revolutionary within the UK government system at the time.

6.4.3.4 Capacity to shape the region's future

Both project leaders were at opposite ends of the regional power spectrum, and with it arguably their organisational capacity to shape the region's future. Being a *Land*, or State, means Hamburg has the same constitutional powers as the other German Federal States such as Nordrhein-Westfalen and Bavaria, although its power is concentrated in a much smaller geographical area. All government organisations linked to the Hamburg State, such as the RITTS project leader, were perceived and treated as an actor with substantial degrees of power. That is why it is rather ironic that this powerful actor did not engage in more strategic reflection about the city's future during RITTS, whereas the very understaffed and underfunded project leader of RITTS South Coast Metropole did. Hamburg had the institutional capacity to shape the region's future, yet it did not seem to apply this capacity for strategic thinking, but instead opted for immediate operational results to emerge from the RITTS project. South Coast Metropole found itself in the opposite situation with limited institutional capacity to implement even the smallest of operational actions, but the organisation was eager to achieve highly strategic, ambitious objectives for the region.

In the case of RITTS Hamburg, the challenging aspect for a powerful policy actor this result-driven was to genuinely engage in interactive, collaborative decision-making with stakeholders. For the Hamburg project leader, RITTS turned out to be as much a 'learning experience' for the Ministry as anything else, with stakeholders taking the opportunity to vent their frustration and re-purposing the interaction with the Ministry to their needs. For South Coast Metropole, the learning experience was realising how much impact 'institutionalisation' (or the lack thereof) had on the stakeholders' willingness to commit. This was also a clear conclusion from the RITTS programme evaluation (Charles et al., 2000:85): "when there is no legitimate authority in a region, or if the region is defined as an ad hoc partnership, the result of a RITTS can generally not take the form of a sound regional innovation strategy (…). [This is] because either there is no neutral actor in a position to endorse and give life to such a strategy (as it is the case in the Nordic regions), or, if there is one (such as the English 'partnerships'), it has no decision power nor budgetary means to transform strategic words into reality."

6.4.4 Contextual level of governance quality: 'congruence'

6.4.4.1 Territorial demarcation

Although Hamburg's climatological conditions are not as extreme as those in RITTS Highlands and Islands, the moderate sea climate can be spooky at times with storms, high tides and flooding; they are accepted as normal seasonal occurrences. As in Highlands and Islands, these climatological conditions correlate with a specific outlook on life. The cool and understated 'Hanseatic' mentality of the Hamburg locals and their 'just-get-on-with-it' attitude is well known in Germany, considered a people not easily shaken by disasters, natural or man-made. In the South Coast Metropole region, mild climate conditions prevail giving the region the UK's best seaside resorts, attracting as many as 2 million overnight visitors and 4.5 million day tourists annually; it is also a popular UK retirement destination (Wikipedia).

As far as man-made borders are concerned, Hamburg city's origins lie in the first castle settlement erected by King Charlemagne in the 9th century and the Hamburg region developed outwards from the city borders of the Free and Hanseatic City of Hamburg.

Although Hamburg enlarged its territory over the centuries, the region's physical growth is remarkably homogenous, developing outwards from one nucleus, even today. The South Coast Metropole has an equally rich historic past, dating back even further to pre-Roman times with traces of Celtic settlements in the 4th and 3rd centuries BC, but it is a region that has always been the sum of different settlements. The territorial demarcation of this RITTS region is artificial and not as organic as in RITTS Hamburg.

6.4.4.2 Territorial identity

With a shared, impressive past as *Hansestadt* and an equally impressive economic powerhouse position within Germany, it should come as no surprise that the territorial identity of Hamburg locals is strong and their identification with Hamburg a source of pride. Being Germany's largest and Europe's third largest port (after Rotterdam and Antwerp), Hamburg has been a major trade and transportation hub connecting mainland Europe with Scandinavia throughout its history. After German reunification in 1990, Hamburg recovered the eastern portion of its hinterland, becoming the fastest-growing port in Europe at the time of the RITTS project.

The territorial identity of South Coast Metropole's inhabitants is more at the level of the city (and its football club) than at regional level, despite the region's shared past. The history of the region is a collection of the individual cities' histories. Southampton and Portsmouth are Roman coastal-fortress cities and naval ports; Poole and Bournemouth are newer settlements. The importance of Southampton as a trade hub between Great Britain and mainland Europe dates back to Roman times nearly two thousand years ago. Southampton is a site for oil and petrochemical industries and continues to serve as an important port, cargo and transit hub. Southampton is also the port from which the Titanic set sail on its doomed maiden voyage in 1912. The naval and military defence base continues to be centred on Portsmouth. Bournemouth is a well-known tourist and retirement destination, and the Isle of Wight with Poole represent unique environmental value. Southampton lies at the heart of the South Coast Metropole area and has been said to fulfil the role of 'nexus' in this inter-linked economic region (Bobe & Shurmer-Smith, 2007). The area, however, has no tradition of political cooperation and some have argued that the region lacks a shared historical identity: an overarching historical narrative with which the inhabitants identify (Hoyle, 1997).

6.4.4.3 Territorial institution

None of the other regions in this study represents such opposing degrees of 'institutionalisation' of regional government as these two metropolitan regions. The RITTS Hamburg region has – out of all six RITTS regions in this study – the highest concentration of political power, bundling local and regional power in the same political territory (the *Freie und Hansestadt Hamburg*), and covering all three branches of state power: executive, legislative and judicial. In Hamburg, government intervention is based in strong authoritative decision-making power which – in the context of RITTS – was put to use in a rather non-strategic, operational manner.

The South Coast Metropole Partnership, on the other hand, set itself a highly strategic goal, but had to spend a considerable amount of time on mundane issues such as securing financial and human resources for its daily operation. This is mainly because these kinds of partnerships have no administrative meaning in the UK nation-state construct. The creation

of a South Coast Metropole region was a brave attempt to establish a political match and through political cooperation endeavour to become a stronger regional force. Neither the local boroughs that made up the Partnership nor the Partnership itself had the authoritative decision-making power needed to make this construct a real force for regional change. In addition, these actors did not have access to the resources that come with functional powers bestowed upon regional development organisations, such as in RITTS Highlands and Islands and RITTS North East of England. As a result, all five local authorities that made up RITTS South Coast Metropole region seemed to be engaged in a 'continual' search for consensus in defining the areas of common interest.

6.5 Main roles of regional government per RITTS region

The two guiding questions of chapter 6 are, firstly, what type of 'policy discussion' is taking place: mainly operational, procedural, constitutional, or contextual? Sections 6.2, 6.3 and 6.4 dealt with the first question and analysed the policy-making process in all six of this study's regional cases based on 15 indicators. The second guiding question of chapter 6 is how to interpret this discussion in terms of the dominant roles of regional government in designing 'context-specific' regional innovation policy in the six case studies? This section deals with the second question and describes what this 'policy discussion' reveals about the role regional government plays in designing contextualised innovation policy. The 4x4 Public Administration matrix presented in chapter 3 is applied to the six case studies.

Using a matrix with cells that are a combination of positions on the X and Y-axes has a downside. Visually, it gives the impression that each box is hermetically fenced off from its neighbouring box. Reality, however, is much more 'fluid' and gradations exist between different functions and different governance levels. For lack of a better visualisation tool, the matrix is used as a way to characterise which of the sixteen regional government roles came more strongly to the fore in the RITTS policy-making process.

The six matrices to be presented in this section set out to indicate not only what government functions at what governance quality levels were found in each case, but also how important each role was among the roles found. Presenting information according to three dimensions is known as a 'heat map'. When reading the matrices, the following points should be considered:

• Cells that have no colour (white) are to be read as roles that did not come to the fore through the methodological choices employed in this study. Cells that do have a colour are to be read as the roles found in that particular RITTS region case.

• Cells can feature in four colour intensities ranging from dark to gradually lighter versions of that colour, representing the roles found in descending order of importance (with 'No.1 role' being the most prominent role found – down to 'No.4 role' with the lightest colour).

• The attribution of colour intensities is case-specific. The value difference between the four colour intensities is unknown in quantitative terms and cross-case comparisons based on an absolute zero cannot be conducted.

• The roles are derived from the qualitative analysis of the six region cases in sections 6.2, 6.3 and 6.4. Each of the region cases tends to display one dominant role (one matrix cell) which is supported or complemented by one or more other regional government roles (other matrix cells).

• The value interpretation of the importance of the roles starts from this dominant role ('No.1 role'). The other roles found are positioned at the ordinal scale of measurement in

descending order of importance ('No.2 role', No.3 role', 'No.4 role') relative to the 'No.1 role'. It is possible to have more than one role at a similar level of importance relative to the 'No.1 role'.

• As this study did not employ a quantitative measurement tool to attribute the values, a certain degree of arbitrariness has to be accepted; not the absolute, but the relative importance of the roles found in each region case is what matters.

6.5.1 RITTS Neubrandenburg

Table 6.1 visualises the key functions that the project leader in RITTS Neubrandenburg engaged in and the levels of governance at which they were executed. The two functions – of the four described in chapter 3 – that feature most prominently in the RITTS Neubrandenburg region are 'providing public services', and 'being a self-standing unit as part of a larger system'. Both functions are executed at the operational and the procedural governance level. This combination gives four roles: the role of 'responsive problem-solver' features most prominently, followed by 'solution-enabler' and 'relations-handler'. Despite the fact that the efforts were not as successful as hoped for by the project leader, the role of 'pro-active networker' deserves to be mentioned as well.

Table 6.1:	RITTS Neubrandenburg (Germany)			
Levels of governance:	**Functions of regional government:**			
	Embodies the regional community	Provides public services/policies	Is self-standing unit in a larger system	Acts as an agent of change
Operational	*'community-driven organiser'*	*'responsive problem-solver'*	*'relations-handler'*	*'change manager'*
Procedural	*'innovation community-builder'*	*'solution-enabler'*	*'pro-active networker'*	*'agent of change'*
Constitutional	*'regional interest establisher'*	*'system weather-proofer'*	*'competent co-producer'*	*'innovation visionary'*
Contextual	*'regional history connector'*	*'regional-needs-first proponent'*	*'regional power builder'*	*'regional futurist'*

No.1 role as 'responsive problem-solver'

Managing the RITTS project was a primary concern of the Neubrandenburg project leader, a functional, mission-mandated regional government organisation. At this operational level, the regional government organisation was responsive to the innovation problems of the region and endeavoured to find solutions. The organisation saw itself as part of the solution; its *raison d'être* was providing regional firms with public support services in the area of technology transfer and innovation. It was involved hands-on in getting to understand the region's innovation *problématique*. It managed the limited resources of the RITTS project in an efficient

manner and looked for creative solutions to save money (such as carrying out parts of the diagnostic research work itself together with the team of experts).

No.2 role as 'solution-enabler'

Within that same function of a 'public service provider', regional government put in place, at the procedural level, the conditions needed to allow for the adequate performance of the tasks at the operational, managerial level. This was demonstrated in the support given by the project leader to help the team of experts collect factual evidence, by the focus (and at times concern) on involving the key innovation-relevant stakeholders in the decision-making process, and by the many efforts undertaken to help build consensus between project team and Steering Committee in each of the RITTS project stages.

No.2 role as 'relations-handler'

The latter preoccupation of the project leader – the difficulty of building consensus and achieving progress in the project – meant that the regional government organisation in charge of RITTS put in a great deal of additional effort to build relationships with the individual Steering Committee members. In the management of intergovernmental relations, the organisation was more successful at managing its EU relations than managing 'access' to the region's most important government actor, the State Ministry of Economic Affairs. Benchmarking with other German regions was actively pursued by the project leader as a means to 'connect' the region to a wider community, establish relationships (including getting this relatively new organisation 'noticed' internationally) and exchange different viewpoints.

No.3 role as 'pro-active networker'

Within that same function of being 'a self-standing unit in a larger system', this regional government put in place, at the procedural level, the conditions needed to engage in networking. This was done by organising multiple Steering Committee meetings bringing its members together, bilateral liaising with the State Ministry, and 'steering' networking activities at the operational level in a particular way: more closed, centralised and controlling. As the organisation was new in the region, it faced a strong consensual elite, which hindered it from being as effective as it would have liked.

6.5.2 RITTS Highlands and Islands

Table 6.2 visualises the key functions that the project leader in RITTS Highlands and Islands engaged in and the levels of governance at which they were executed. The two functions that featured most prominently in the RITTS Highlands and Islands region were 'embodying the regional community' and 'acting as an agent of change'. The execution of these functions did not start at the operational level (as in Neubrandenburg), but started at the contextual level and triggered downwards to the constitutional level. This combination gives four roles: the role of 'regional history connector' features most prominently, followed by 'regional interest establisher', 'innovation visionary' and 'agent of change'.

Table 6.2:   RITTS Highlands and Islands (United Kingdom)

Levels of governance:	Functions of regional government:			
	Embodies the regional community	Provides public services/policies	Is self-standing unit in a larger system	Acts as an agent of change
Operational	*'community-driven organiser'*	*'responsive problem-solver'*	*'relations-handler'*	*'change manager'*
Procedural	*'innovation community-builder'*	*'solution-enabler'*	*'pro-active networker'*	*'agent of change'*
Constitutional	*'regional interest establisher'*	*'system weather-proofer'*	*'competent co-producer'*	*'innovation visionary'*
Contextual	*'regional history connector'*	*'regional-needs-first proponent'*	*'regional power builder'*	*'regional futurist'*

No.1 role as 'regional history connector'

Typical for this role is the shared awareness and collective pride in the region's history. Its population has a strong regional identity and 'shared stories' are an important element of that identity. Government actions breathe a strong historic-regional identity logic. In the case of Highlands and Islands, the desire to have its own university, similar to other regions in Scotland, drove the regional government actions in the area of innovation policy. It was the overarching frame from which other actions followed. The 'shared innovation story' was that the majority of regional stakeholders and other prominent locals were convinced that the region's under-developed innovative capacity was related to the absence of a strong, research-based university in the Highlands and Islands. Once this was in place, it would be far easier to upgrade the innovation capacities of local firms. This regional logic set the meta-frame for all other governance levels and government functions.

No.2 role as 'regional interest establisher'

At the constitutional level, regional government managed to establish the 'regional interest' which reinforced its trustworthiness in the region. Four years prior to the RITTS project, in 1990, the Highland Regional Council set up a Steering Group to examine the case for a University of Highlands and Islands (UHI). Two years later, in June 1992, the work of the Steering Group culminated in the publication of a report confirming the scope for a federal, collegiate university based on the existing Further Education colleges. As a follow-up to the report, Highlands and Islands Enterprise created a dedicated UHI Project Office and by spring 1994, UHI Limited was founded and staffed with a full-time team. It might come as no surprise to learn that it was this very same team that submitted the RITTS proposal in 1994. It was this kind of follow-up and follow-through that gave the RITTS Highlands and Islands project leader a reputation as an actor that 'makes things happen for the people'.

No.3 role as 'innovation visionary'

In the case of RITTS Highlands and Islands, the function of representing the regional community found a natural friend in the function where regional government acts as an agent of change. Connecting the region to its deserved place in Scottish history (its own university) required wilful action on behalf of those actors in the region that could make this dream come true. At the constitutional level, regional government's actions were associated with 'transformation', gearing the region up for a new future. Regional government was respected and praised for its strategic approach and decisiveness. The latter – strategy, vision, decisiveness – was also catered for at the procedural level.

No.4 role as 'agent of change'

At the procedural level, the RITTS project leader demonstrated political leadership, also in adverse situations (such as resistance by the London-based central government to the idea of establishing a university in a peripheral, sparsely populated part of the country, but also resistance from within the region by those who saw the contribution of a university to regional development differently). Regional government actively sought and used input from external experts. Regional government interacted with other government tiers, particularly the EU, to present its case and convince. It was an actor that was good at acquisition of third party funding, cleverly applying the rules and procedures of other government tiers in function of advancing the region's interest (for example, obtaining national and EU subsidies).

6.5.3 RITTS Aachen

Table 6.3 visualises the key functions that the project leader in RITTS Aachen engaged in and the levels of governance at which they were executed. RITTS Aachen was the only region that featured three of the four functions distinguished in this study, executed at three of the four governance levels (as such it comes closest of all the six case studies to having a 'whole-of-government' approach (OECD, 2005). These were: 'providing public services and policies', 'embodying the regional community' and 'being a self-standing unit as part of a larger system'. The execution of these functions started at the operational level, but also encompassed the procedural and constitutional levels. This combination gives nine roles: the role of 'responsive problem-solver' features most prominently, followed by 'solution-enabler' and 'system weather-proofer'. Also found – in a supporting and complementary function – are the roles of 'community-driven organiser', 'innovation community-builder', and 'regional interest establisher', as well as 'relations-handler', 'pro-active networker', and 'competent co-producer'.

No.1 role as 'responsive problem-solver'

Similar to RITTS Neubrandenburg, the RITTS Aachen project leader was a functional, mission-mandated regional government organisation in charge of managing this EU co-funded project. At this operational level, the regional government organisation was responsive to the innovation problems of the region and endeavoured to find solutions. But unlike Neubrandenburg, the project leader saw itself backed up by the region's key stakeholders as

the best-placed organisation to guide the region towards a more efficient and effective ITT infrastructure.

Table 6.3:	RITTS Aachen (Germany)			
Levels of governance:	**Functions of regional government:**			
	Embodies the regional community	Provides public services/policies	Is self-standing unit in a larger system	Acts as an agent of change
Operational	*'community-driven organiser'*	*'responsive problem-solver'*	*'relations-handler'*	*'change manager'*
Procedural	*'innovation community-builder'*	*'solution-enabler'*	*'pro-active networker'*	*'agent of change'*
Constitutional	*'regional interest establisher'*	*'system weather-proofer'*	*'competent co-producer'*	*'innovation visionary'*
Contextual	*'regional history connector'*	*'regional-needs-first proponent'*	*'regional power builder'*	*'regional futurist'*

No.2 role as 'solution-enabler'

Within that same function of a 'public service provider', regional government was very concerned about putting in place, at the procedural level, the conditions needed to allow for the adequate performance of the tasks at the operational, managerial level. In particular, when it came to the collection of robust data and other evidence to showcase the region's ability (or inability) to innovate. Data whose quality and collection method had to be 'beyond any doubt' and 'beyond reproach' to convince a small, but strong and sceptical Steering Committee. A great deal of time and resources of both project leader and EU experts were employed in all RITTS project stages to achieve this. Building consensus was a key preoccupation of the regional government organisation in charge of the Aachen RITTS project, as it wanted to arrive at a set of concrete and ready-to-implement measures by the time RITTS ended.

N°2 role as 'system weather-proofer'

Within that same interpretation of a 'public service provider', but at the constitutional level, the point was to create the conditions for a system that was capable of handling change. The preoccupation of the regional government organisation with building consensus among the regional stakeholders was to put in place a more efficient and effective ITT infrastructure. Strengthening and capacitating the current infrastructure was seen by the RITTS Aachen project leader as conditional for allowing it, in the near future, to upgrade the innovation capacities of local firms (which in turn was assumed would help regional development overall). The focus on collecting robust data and building sustainable consensus was instrumental: the regional government organisation wanted to achieve a more 'weatherproof' system of innovation support in a relatively short period of time. That is also why – at Stage 3 – much

attention was given to the RITTS afterlife, including the design of an evaluation and monitoring system to programme in continuous learning and renewal.

No.3 role as 'community-driven organiser'

The function of 'providing public services and policies' was the primary function from which action started in the RITTS Aachen region, and this function was expressed at three levels of governance action: operational, procedural and constitutional levels. This action, however, was also closely linked to the idea that the region embodied a regional innovation community centred on the region's university, the RWTH. The region – particularly the urban part of the region made up of Aachen's historic city – displayed a shared awareness and collective pride in its role in history. The RWTH University – with its reputation of academic excellence and its impressive track record in attracting third party funding – stood (and still stands) symbol for the region as a bastion of knowledge. Both RWTH and the RITTS project leader were seen as national, even international benchmarks of innovation-led regional development. The RWTH was (and still is) the region's 'shared innovation story', but it is the RITTS project leader's organisation that put all its energy into creating the right conditions for the region to innovate and for the region to become an 'innovation community' in the RITTS project.

No.3 role of 'innovation community-builder'

Within that same function of 'embodying a regional innovation community', but at the procedural level, the regional government organisation in charge of RITTS demonstrated – in Steering Committee meetings – that it was able to handle local power monopolies. In order to reduce 'political capturing' during the RITTS project, the regional government organisation set in place administrative rules and other procedures guiding the decision-making. Besides plenary meetings, the project leader also organised many bilateral meetings with regional stakeholders and key organisations as a way to facilitate 'the road to consensus'.

No.3 role of 'regional interest establisher'

The regional government organisation in charge of RITTS acted from a position of authority; it was trusted in the region as an organisation that 'gets things done'. Given its successful collaboration with the RWTH and both Chambers of Commerce, these three actors were, jokingly, referred to as the region's 'holy trinity'. They were trusted organisations known for having the region's interests at heart. Advocating the regional interest was, however, not so much 'by the people' –as in Highlands and Islands – but 'for the people'.

No.3 role of 'relations-handler'

The perception of 'doing it for the people' has some overlap with the function of 'acting as a self-standing unit in a larger system'. In RITTS Aachen, the overarching function of 'providing public services/policies' to the region set the context from which the other functions – 'embodying the regional innovation community' and 'being a self-standing unit as part of a larger system' – followed. They were enacted as 'flanking measures' to increase the effectiveness of the measures proposed. Handling relationships with the major stakeholders

in the region was given a great deal of thought by the project leader, necessary as it was to achieve consensus.

No.3 role of 'pro-active networker'

This role spilled over into the role of 'pro-active networker' at the procedural level: engaging with regional stakeholders, and putting the right conditions in place to get them to talk to one another. Managing intergovernmental relations with central government and the EU within the context of RITTS at the operational level, spilled over to the procedural and constitutional level in the role of 'competent co-producer'.

No.3 role of 'competent co-producer'

The heavy amount of 'social engineering' undertaken successfully by the project leader convinced the European Commission of the organisation's competence to build consensus and solve conflicts. RITTS Aachen was considered a 'best practice' example and held up as a benchmark for other regions by the European Commission at RITTS networking events. In Stage 3, the project leader looked for constitutional and institutional possibilities to solve region-specific innovation and technology transfer needs in partnership with other government tiers ('co-production'), notably the State Ministry of Economic Affairs, Technology and Transport. Albeit less successful, a joint strategy paper was prepared during Stage 3 to participate in the region-wide, State Ministry-initiated debate on regional innovation policy.

6.5.4 RITTS North East of England

Table 6.4 visualises the key functions that the RITTS North East of England project leader engaged in and the levels of governance at which they were executed. The two functions that featured most prominently in RITTS North East of England were 'providing public services and polices', followed by 'being a self-standing unit as part of a larger system'. The contextual level of the 'providing public services/polices' function was more prominent than the functions executed at the operational level. This combination gives three roles: the role of 'regional-needs-first proponent', followed by – on an equal footing – 'responsive problem-solver' and 'relations-handler'.

No.1 role of 'regional-needs-first proponent'

Like other cases in this study, this region acted out the two roles of a 'responsive problem-solver' and a 'relations-handler'. The overarching frame from which these roles followed is, however, different. The function of 'public service/policy delivering' is executed at the contextual level, resulting in the role of 'regional-needs-first proponent' being the most prominently enacted role in this RITTS region.

Similar to RITTS Highlands and Islands, the North East of England RITTS project leader interpreted the RITTS project in terms of what the region needed most. This RITTS project deviated from the standard RITTS methodology and the project leader decided to operationalise Stage 2 differently, focusing on collecting 'best practice' examples of regions facing similar problems. Other decisions were taken in the same vein: selecting a new team of

experts in Stage 2 (the original team was replaced by the team that conducted RITS, the RITTS predecessor project); selecting the organisation to perform the project management (a different one was asked to manage from Stage 2 onwards as the original one was preparing the Single Programming Document to obtain European regional funds); the amount of time and attention to be dedicated to the RITTS project at Steering Committee meetings (one of many agenda points). Even the RITTS Steering Committee itself was 'borrowed' from another EU policy context; all the decisions seem to have been taken based on 'what works best here and now'.

Unlike RITS Highlands and Islands, however, the overriding principle of 'regional needs first' guiding the decision-making process was not the regional logic, but seemed to be the functional logic of the organisation in charge. As this organisation was in charge of regional development, one could argue that the region would benefit from its actions in the end, but the 'policy discussion' was a different one: more pragmatic, more funds-driven, and far less passionate and community-driven than the one in Scotland.

Table 6.4:	**RITTS North East of England (United Kingdom)**			
Levels of governance:	**Functions of regional government:**			
	Embodies the regional community	Provides public services/policies	Is self-standing unit in a larger system	Acts as an agent of change
Operational	*'community-driven organiser'*	*'responsive problem-solver'*	*'relations-handler'*	*'change manager'*
Procedural	*'innovation community-builder'*	*'solution-enabler'*	*'pro-active networker'*	*'agent of change'*
Constitutional	*'regional interest establisher'*	*'system weather-proofer'*	*'competent co-producer'*	*'innovation visionary'*
Contextual	*'regional history connector'*	*'regional-needs-first proponent'*	*'regional power builder'*	*'regional futurist'*

No.2 role of 'responsive problem-solver'

At the operational level of the 'providing public services' function, the regional government organisation showed interest in understanding better what the region's innovation problems were and came up with proposals for action on how to address these problems (or at least parts of them). The regional government organisation in charge of RITTS operated from a 'responsive problem-solver' role and agreed on six 'priority areas for action', even though the six 'priority areas for action' essentially covered one deficiency of the regional innovation system: the functioning of the intermediary ITT organisations. The question that comes to mind is: was this because it was the most pressing obstacle to innovation in the region, or because these solutions were available and hence easier to implement in a short space of time ('solutions in search of a problem')? Of all the RITTS cases investigated in this study, this one gave the most utilitarian impression to an outside observer. The RITTS project was a 're-run' of RITS, a previous European co-funded project. Having to earn a considerable part of its

income in the marketplace, the RITTS project was one of many project acquisitions by the regional government organisation to generate revenue and was managed alongside many others. Resources were used efficiently, and creative solutions were applied in this situation of being 'under-resourced', but perhaps it came at the expense of content and debate.

No.2 role of 'relations-handler'

The function of being a 'self-standing unit as part of a larger system' was acted out at the operational level: in the role of 'relations-handler'. Similar to RITTS Highlands and Islands, there was consensus between project leader and Steering Committee on the role of this RITTS project within the regional context. The Steering Committee represented all the major innovation-relevant stakeholders in the region. Of all six cases in this study, RITTS North East of England worked with the largest Steering Committee. Multi-level relations were handled within this setting. Regional benchmarking was of interest to both project leader and Steering Committee. Although the project leader's organisation was not involved hands-on in the actual data gathering and data analysis, it was involved hands-on in selecting the team of experts (which 'brains') that was considered to provide more added value to the region. Relations with the European Commission were handled in the light of 'selling' the decisions taken in the RITTS project as equally relevant for the EU ('they want the RITTS project to succeed, surely?').

6.5.5 RITTS Hamburg

Table 6.5 visualises the key functions that the RITTS Hamburg project leader engaged in and the levels of governance at which they were executed. The two functions that featured most prominently in RITTS Hamburg were 'providing public services and polices' and 'being a self-standing unit in a larger system'. These functions were executed at three levels: the constitutional level was the starting point of action, but succeeding at that level was seen to be closely linked to the procedural and operational levels of governance. This combination gives five roles. In order of importance these roles are: 'system weather-proofer' as the most prominent one, followed by 'solution-enabler' and 'responsive problem-solver', and thirdly 'competent co-producer' and 'relations-handler'.

No.1 role of 'system weather-proofer'

There was a genuine concern – within the Hamburg administration, in particular the Ministry of Economic Affairs – about the underperformance of the ITT system at that time and there was an urgent political need to address it in view of shrinking government budgets in the aftermath of German reunification. After a good two decades of public funding to technology transfer organisations, the Ministry was now faced with a technology transfer infrastructure that was highly fragmented, non-transparent, and competitive to the point that the system was more a hindrance to regional innovation happening than facilitating it. The Ministry set itself the objective to create the conditions for a new technology transfer system to emerge, one that would address companies' needs, undertake referrals, engage in cooperation and coordination, but also one that would be fit for future challenges (such as operating under conditions of decreasing public funds). The Ministry also took the view that, for the purpose of learning and renewal, a new technology transfer concept had to be accompanied by the

possibility to monitor and evaluate the outputs of the organisations and the results for the beneficiaries.

Table 6.5:	RITTS Hamburg (Germany)			
Levels of governance:	**Functions of regional government:**			
	Embodies the regional community	Provides public services/policies	Is self-standing unit in a larger system	Acts as an agent of change
Operational	*'community-driven organiser'*	*'responsive problem-solver'*	*'relations-handler'*	*'change manager'*
Procedural	*'innovation community-builder'*	*'solution-enabler'*	*'pro-active networker'*	*'agent of change'*
Constitutional	*'regional interest establisher'*	*'system weather-proofer'*	*'competent co-producer'*	*'innovation visionary'*
Contextual	*'regional history connector'*	*'regional-needs-first proponent'*	*'regional power builder'*	*'regional futurist'*

No.2 role of 'solution-enabler'

Succeeding at this constitutional level of getting the system 'weatherproofed' was seen by the Ministry to hinge on meticulously defining, assigning and accomplishing the tasks needed to achieve this. Like the other German regions in this study, the Ministry devoted a great deal of thought and attention to procedural and managerial details. As a 'solution-enabler', the RITTS project leader used its formal position as Ministry to facilitate the collection of factual evidence, access to and the involvement of relevant stakeholders, the consensus-building process, and the management of conflicts of interest. The project leader demonstrated leadership not only by the extent of involvement organising the process, but also by following through with implementing the decisions taken.

No.2 role of 'responsive problem-solver'

As with the procedural level, the operational level served to support the constitutional level of getting the system 'weatherproofed'. For the project leader, creating the conditions for a new technology transfer system needed to be based on a factually correct definition of the problem, in order to come up with a 'customised' solution. The Ministry's emphasis on employing solid research methods resulting in robust data was linked to the lack of recent, reliable, region-wide data. The data collection and data analysis also served as a 'myth buster', confronting the unwilling stakeholders with reality and instilling a sense of urgency to address the matter 'here and now'. The RITTS project leader managed the resources efficiently, and was creative in finding 'budget-neutral' solutions (which meant that the German lead expert had to work hard to earn the RITTS standard consultancy fee for doing increasing amounts of non-RITTS standard work).

No.3 role of 'competent co-producer'

The Ministry had a good standing in the region, was seen as competent, and enjoyed the reputation of being *'ein Macher'*, an organisation that gets things done, also because the toolkit of policy instruments at its disposal was wide-ranging. Its reputation and power position resulted in companies being very frank in their replies to the team of experts. They felt that their concerns about the ITT infrastructure would not be ignored with this Ministry commissioning the work. The RITTS project leader, the Ministry of Economic Affairs in charge of technology and innovation policy, had a good, long-time working relationship with the Ministry of Education in charge of research and science policy. Both Ministries collaborated intensively in the RITTS project, building upon an already existing productive relationship. Both Ministries enjoyed full political backing from both the Hamburg government and the Hamburg Parliament and were expected to engage in policy changes jointly.

No.3 role of 'relations-handler'

Here, too, the operational level served to support the constitutional level. The Ministry fulfilled the role of 'relations-handler' by contacting all key stakeholders, organising bilateral meetings with them, and keeping them on board in the RITTS project. As this role was enacted by complementing and/or supporting the constitutional governance level, the relationships tended to be more one-directional, with top-down imposed instructions. As relations were handled in a closed, centralised and controlling fashion, the procedural level of a 'pro-active networker' reaching out, bringing others into the conversation and facilitating their interaction, did not apply here. Both Ministries represented the region's 'consensual elite' and knew it; they acted accordingly within the constitutional framework of action at their disposal. The organisations affected by the changes were not part of the decision-making process.

What the Ministry was interested in, as far as pro-active networking was concerned, was an exchange between German-speaking RITTS regions which Hamburg, together with Bremen, initiated. All German RITTS regions were very interested to hear how the RITTS project was taken up in the various regions, how regional stakeholders were handled, how conflicts were resolved, what outputs were achieved, what obstacles were encountered, etc. The Ministry instructed the German lead expert to organise these meetings, another example of the project leader's creative use of limited resources (and giving the consultants a run for their money).

6.5.6 RITTS South Coast Metropole

Table 6.6 visualises the key functions that the RITTS South Coast Metropole project leader engaged in and the levels of governance at which they were executed. The two functions that featured most prominently in RITTS South Coast Metropole were 'acting as an agent of change' and 'embodying the regional community'. The role of 'innovation visionary' at the constitutional level was the key role driving the actions at the other levels, notably at the operational and procedural levels. The combination of government functions and governance levels gives six roles: the four different expressions of the 'acting as an agent of change' function (that of 'change manager', 'agent of change', 'innovation visionary', and 'regional futurist') are most prominent, followed by 'community-driven organiser' and 'innovation community-builder'.

Table 6.6:	RITTS South Coast Metropole (United Kingdom)			
	Functions of regional government:			
Levels of governance:	Embodies the regional community	Provides public services/policies	Is self-standing unit in a larger system	Acts as an agent of change
Operational	*'community-driven organiser'*	*'responsive problem-solver'*	*'relations-handler'*	*'change manager'*
Procedural	*'innovation community-builder'*	*'solution-enabler'*	*'pro-active networker'*	*'agent of change'*
Constitutional	*'regional interest establisher'*	*'system weather-proofer'*	*'competent co-producer'*	*'innovation visionary'*
Contextual	*'regional history connector'*	*'regional-needs-first proponent'*	*'regional power builder'*	*'regional futurist'*

No.1 role of 'innovation visionary'

At the constitutional level, the four local boroughs were aware of the void in the UK administrative system, which lacked a regional tier of government, and so they set up a partnership collaboration – South Coast Metropole Partnership – to fill this void and have a stronger voice on shared regional issues. The partnership was concerned with finding an appropriate administrative form to match the "distinctive [character of the] 'Central South' region which has national importance in its own right" (Crow Report, 1997, after the chairman prof. Stephen Crow). Exploiting the untapped potential of an economically inter-linked region was more likely to succeed if the region was also politically inter-linked and joined up, was the train of thought. Within a partnership setting, coordination and collaboration could be organised more systemically, which would strengthen the innovation capacity of the region as a whole.

No.2 role of 'regional futurist'

At the contextual level, the South Coast Metropole Partnership's idea of change was about redefining the region's past into a new future, one that was global and open to the world. The Partnership members were convinced that the region's geographical position and economic function as a transport and transit hub to continental Europe offered a promising (and so far under-exploited) avenue to future developments.

No.2 roles of 'change manager' and 'agent of change'

Why then were actions by the Partnership not successful in making this dream a reality, despite all the efforts undertaken at the operational and procedural levels? This is because the 'promise of change' was too general an idea and the administrative arrangement in the form of the partnership was too weak in terms of decision-making power.

The RITTS project – which first and foremost required action at the operational and procedural level – made these weaknesses visible. During a sustained period of time, the RITTS project leader was very much preoccupied with finding the matching funds and administrative staff to finish Stage 1, which in the end lasted almost two years. Once these issues were resolved, Stages 2 and 3 went ahead dynamically and productively, liaising with all the relevant stakeholders. Each of the five 'key actions' for which regional consensus was found addressed different aspects of the regional innovation system's fragmentation. Each of the five 'key actions' were small, but meaningful steps in helping firms address the innovation obstacles they encountered in the region.

No.3 role of 'community-driven organiser'

Besides the function of 'change agent', the other function was 'embodying the regional community', acted out at the operational (as 'community-driven organiser') and procedural level (as 'innovation community-builder'). The Sector Focus Programme was one of the five 'key actions'. Being a cluster strategy, it set out to develop the region as a European 'marine pole of excellence' by facilitating all kinds of marine-relevant collaborations (between firms themselves, between firms and R&D centres, between R&D centres and universities). Not only would a successful cluster strategy increase companies' innovative capacity, it would also 'brand' the region as an innovation community in that particular area of economic activity, in turn attracting new knowledge workers and knowledge organisations to the region.

No.3 role of 'innovation community-builder'

Much to the credit of the way in which this RITTS project was managed, each of the five 'key actions' was a direct result of the involvement of regional enterprises. The project leader was keen to hear from these players directly and in an 'unfiltered' way what innovation obstacles they thought needed addressing. By giving this group of stakeholders a strong voice in the policy-making process, the project leader actively contributed to reducing decision-making bias and reinforced feelings of trust ('one of us'). It was the only RITTS region of the ones investigated in this study that took the firms' input as the main direction for its RITTS regional innovation strategy.

The RITTS South Coast Metropole project was not so much the expression of an already existing shared community feeling, as in RITTS Highland and Islands, but the RITTS project was seen as an opportunity to engage in a community-building effort. Some had commented earlier that "the region as a whole appears to lack a clear perceived historical identity" (Hoyle, 1997). In 1997, the year that the RITTS project ended, a UK-wide local government reform took place, splitting the South Coast Metropole region in two. It put the boroughs of Poole and Bournemouth in the county of Dorset which belonged to the South West Region, while the other three local boroughs (Southampton, Portsmouth and the Isle of Wight) continued to be part of the South East Region of England in the county of Hampshire. Any future regional planning now had to be co-ordinated by not one, but two central government regional authorities (Government Office for the South West and the Government Office for the South East), on top of the already existing coordination difficulties among the many local and county jurisdictions in the South Coast Metropole region. The general feeling was that all the recent attempts to turn this fragmented, yet economically inter-linked region into one coherently functioning region were undermined. However, the way this centrally directed reform was

commented on and condemned in the regional press and by regional politicians demonstrated a much stronger presence of community pride and community belonging than had been anticipated prior to the reform.

6.6 Summary

This chapter has shed light on how 'context-specific' regional innovation policy came about in the six regions covered in this study. This has been done with the help of the Public Administration matrix presented in chapter 3 that served as the analytical framework organising the data. The policy design process in each of the six regions has been approached as a 'policy discussion' about decisions to be taken by the regional government organisation in charge of developing a 'context-specific' regional innovation policy.

This chapter has been organised around two guiding questions.

The first guiding question asked what type of 'policy discussion' was taking place: mainly operational, procedural, constitutional, or contextual. For each of the six regions, the type of policy discussion has been assessed utilising 15 indicators or 'analytical dimensions' that allow a description of the four different levels at which this policy discussion can take place. Approaching the policy design process this way – as a multi-layered phenomenon – has helped in better understanding why the final output of the policy design process – the regional innovation policy chosen – in each of the study's six region cases was this one rather than the theoretically predicted one.

The second guiding question of this chapter asked what this policy discussion revealed about the role of regional government in designing 'context-specific' regional innovation policy. A great variety of regional government roles has been found among the six cases. The variety concerned both the government function and the governance level at which the roles were executed.

The next chapter will present the research findings in detail and will engage in a search for patterns. In the next chapter, the study's research question will be answered as well and conclusions will be drawn from the research findings.

7

Results and Conclusions

"Pour être l'homme de son pays, il faut être l'homme de son temps"

François-René, vicomte de Chateaubriand (1768-1848), French writer and politician

7.1 Introduction

The research question of this study is to what extent and if so, how does regional government matter in the design of 'context-specific' regional innovation policy. Answering the research question is the subject of this chapter. In addition, a search for patterns will be undertaken to explore, firstly, the extent to which the existence of particular roles in a given region is linked to its dominant innovation *problématique* and, secondly, to what extent these roles are linked to the administrative position of the regional government organisation within its nation-state. A distinction is made between general-purpose and single-purpose regional government organisations to explore, thirdly, whether regional government roles differ between regional government organisation types.

Chapter 7 is organised as follows. After the introduction in section 7.1, section 7.2 will present the study's main findings. Section 7.3 investigates the extent to which the data demonstrate patterns in view of the two key variables of this study. Sub-section 7.3.1 will explore whether regions with similar innovation challenges (peripheral, old industrial, metropolitan) display similar regional government roles. Sub-section 7.3.2 will explore whether regions with similar formal administrative positions in their respective nation-state (federal vs unitary government systems) display similar regional government roles. Sub-section 7.3.3 will explore whether similar regional government organisation types display similar regional government roles. Section 7.4 answers the research question. Section 7.5 presents the study's conclusions. Section 7.6 discusses the study's limitations. Section 7.7, finally, reflects on the relevance of the research findings from both an academic and a policy perspective.

7.2 Main findings

Government is about governing, and governing is essentially about taking decisions (Peters & Pierre, 2016). The policy design process in each of the six region cases has been approached as a 'policy discussion' about decisions to be taken by regional government to arrive at a contextualised regional innovation policy. Within the framework of the European RITTS programme, the decisions that needed to be taken by the regional government organisation in charge of a RITTS project were wide-ranging and included: what tasks to assign to the experts and what type of data to collect; who to appoint as a Steering Committee member and what rules to put in place to reach consensus and handle conflicts; how to translate the problem definition into policy options and how to select from these options the one that would be implemented; but also, how to interact with the European Commission, and how to involve relevant policy actors from outside the region, such as national Ministries.

For each of the six regions, the RITTS policy-making process has been analysed according to 15 indicators that operationalise the four different levels at which this 'policy discussion' can take place: operational, procedural, constitutional, and contextual. The purpose of the multiple-case analysis – structured by these 15 indicators – is to reveal the real-life roles regional government takes on in the policy-making process to succeed at developing a 'context-specific' regional innovation policy as opposed to deducing these roles from formal competencies, official mandates and task descriptions. Investigating how 'context-specific' regional innovation policy comes about in real life is the approach taken in this study to identify how regional government matters. Sixteen possible roles of how regional government can matter have been distinguished in the Public Administration framework presented in

chapter 3. These roles are a combination of any of the four functions of regional government executed at any of the four levels of governmental governance (Toonen et al., 1998; Toonen & Staatsen, 2004; Toonen, 2015).

Three main findings emerge from chapter 6's multiple-case analysis.

Firstly, among the six case studies a *great variety* of regional government roles was found as depicted in Tables 6.1-6.6. The variety concerns both the regional government functions as well as the governance levels at which these functions were executed.

Secondly, all regional governments engaged in *multiple roles* during the policy process to design their 'context-specific' regional innovation policy; these roles were enacted simultaneously as well as interchangeably.

Thirdly, each of the six regions exhibited *one dominant role* that was either supported or complemented by one or more other regional government roles.

With a total of 31 roles found for all six case studies, covering 15 of the 16 theoretical role possibilities, ranging from 3 to 9 regional government roles per region (on average 5 roles per region), this study concludes that the empirical variety is far greater than theory assumes.

Table 7.1 displays the total of regional government roles found in the six case studies based on absolute numbers (i.e. counting the number of matrix cells found) and without considering levels of importance (in terms of 'No.1', 'No.2', 'No.3', 'No.4 role' as was done in chapter 6). This table is then transformed in Figure 7.1 for easy visualisation. Expressed differently: if one were to put Tables 6.1-6.6 on top of each another, what similarities would become visible, what differences, what patterns could be detected?

Table 7.1:	Roles of regional government found, in absolute numbers (n=6)			
Levels of governance:	**Functions of regional government:**			
	F1: Embodies the regional community	F2: Provides public services & policies	F3: Is self-standing unit in a larger, multi-level system	F4: Acts as an agent of change
Operational	*'community-driven organiser'*	*'responsive problem-solver'*	*'relations-handler'*	*'change manager'*
Total: 11	2	4	4	1
Procedural	*'innovation community-builder'*	*'solution-enabler'*	*'pro-active networker'*	*'agent of change'*
Total: 9	2	3	2	2
Constitutional	*'regional interest establisher'*	*'system weather-proofer'*	*'competent co-producer'*	*'innovation visionary'*
Total: 8	2	2	2	2
Contextual	*'regional history connector'*	*'regional-needs-first proponent'*	*'regional power builder'*	*'regional futurist'*
Total: 3	1	1	0	1
Grand total: (n=6) 31	7	10	8	6

Figure 7.1: Roles of regional government found, in absolute numbers (n=6)
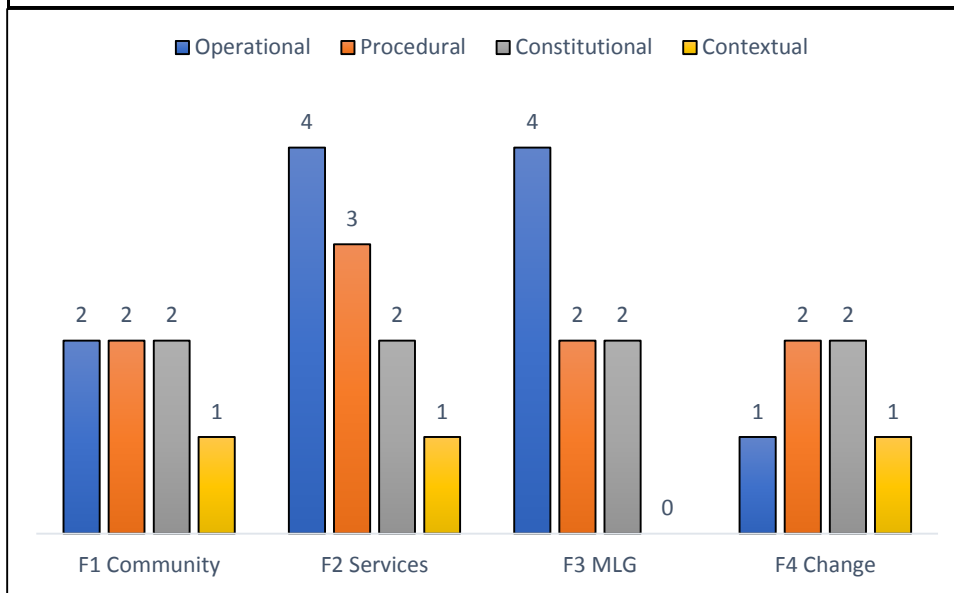
Concerning regional government roles found, the role of 'responsive problem-solver' and of 'relations-handler', representing two different government functions executed at the operational governance level, were the roles most frequently found among the case studies – based on absolute counting. Four of the six regions exhibited these roles (Neubrandenburg, Aachen, North East of England, and Hamburg), albeit in varying degrees of importance. In only two of these four regions, in Neubrandenburg and Aachen, they were the dominant role. Finding these roles is not entirely unexpected given that the managerial format of the RITTS project 'pushed' regional governments in this direction, having to address the region's innovation problems (the project leader was expected to act as a 'responsive problem-solver') through a consensus building process among the region's key stakeholders (the project leader was expected to act as a 'relations-handler').

This finding seems to confirm the claim made in the Regional Innovation Systems literature that regional government matters for designing 'context-specific regional' innovation policies in two ways. Firstly, in the role of 'responsive problem-solver' regional government is considered best placed – due to its unrivalled local knowledge (Morgan & Nauwelaers, 1999) – to define the proper regional innovation *problématique*, decide on appropriate policy choices and then act upon these choices. Secondly, in the role of 'relations-handler' regional government is considered best placed – due to its unique institutional position in the region – to set the conditions for the right actors to meet for innovation to happen and for innovation policy to materialise 'into action'.

However, other roles *not* captured in this literature mattered as well and were in four of the six regions more important (Highlands and Islands, North East of England, Hamburg, and South Coast Metropole). The role of 'solution-enabler' was the second most often enacted role by regional government, executed at the procedural governance level, which was found in three of the six regions (Neubrandenburg, Aachen, and Hamburg).

The third place was taken up by a mixture of 8 different roles, covering operational, procedural and contextual governance levels, with each role being found in two of the six case studies each time.

Fourth and final place was taken up by 3 different roles that were found in one of the six case studies each time. The only role *not* found in any of the six case studies was that of 'regional power builder'. It is the role that prepares for a substantial increase in regional autonomy, and ultimately for regional independence.

Concerning governance levels found, the governance level at which the regional government roles were most frequently enacted was the operational one. Of the 31 roles found in total for all six case studies, 11 were executed at the operational governance level, compared to 9 at the procedural, 8 at the constitutional, and 3 at the contextual governance level.

The multiple roles that all regional governments engaged in during the policy process to design their 'context-specific' regional innovation policy belonged to different governance levels. Two of the regions engaged in policy design at 2 different governance levels (Neubrandenburg and North East of England). Three of the six regions combined 3 governance levels (Highlands and Islands, Aachen, and Hamburg), and one region engaged in policy design at all 4 governance levels (South Coast Metropole).

The dominant role from which regional governments approached the policy design could be at any governance level, but the procedural level did not feature among the six case studies. Two of the six regions approached the policy design from the operational governance level (Neubrandenburg and Aachen), two from the constitutional level (Hamburg and South Coast Metropole), and two from the contextual level (Highlands and Islands and North East of England).

Whatever role became the dominant role seemed to be linked to the region-specific motivation to participate in the RITTS programme. With each governance level representing a particular set of administrative values, what was considered a successful deliverable of the RITTS project – a 'context-specific' regional innovation policy – differed per region and included 'responsiveness' to regional problems, 'resilience' in dealing with change and generating impact, and 'congruence' in designing policy measures 'time and place' appropriate.

The variety in governance levels found demonstrates that similar government functions can be performed in different ways, aspiring to different types of policy success. In RITTS Neubrandenburg, 'success' was defined at the operational level: delivering a policy solution within the constraints of the given institutional context and organisational mission of the RITTS project leader, managing available resources as efficiently as possible. Expressed differently: it was about finding the 'best possible' solution within a framework of constraints.

RITTS Aachen was very attentive to the procedural level and regional government endeavoured to involve key stakeholders in all stages of the decision-making process in order to make them accept responsibility for implementing what was agreed. Expressed differently: it was about finding the 'achievable' solution likely to generate real impact.

In other cases, such as in RITTS Hamburg, 'success' was positioned at the constitutional level. 'Successful' regional government was viewed as government that dared to take relatively unpopular decisions 'here and now' to render the system fit and financeable for the future. It concerned finding the 'long-term' solution that guarantees 'resilience'.

RITTS South Coast Metropole also engaged in the policy discussion at a constitutional level, which centred on the dream of building a more inter-linked region for the future, enabling it to exploit its economic potential more fully.

RITTS Highlands and Islands and RITTS North East of England are regions that engaged in the policy discussion at the contextual level. The overarching question guiding decision-

making was whether it made sense for the region. The measure of 'success' was achieving 'congruence' in time and place from which all other actions at different governance levels followed. Expressed differently: it evolved around achieving the solution 'known to the region' by undertaking all actions deemed necessary.

7.3 Pattern search

Before presenting the findings of the pattern search, the reader is reminded of the distinction between regional government 'function' and regional government 'role'. In this study, 'function' refers to the four functions of regional government as described in chapter 3: regional government as (1) the 'embodiment of the regional community'; (2) as the 'provider of public services and policies'; (3) as the 'partner in a larger, multi-level governance system'; and (4) as the 'agent of change'. In the Figures below, these functions are abbreviated as: (1) 'Community'; (2) 'Services'; (3) 'MLG'; (4) 'Change'. Each of these four functions can be performed at each of the four governance levels: operational, procedural, constitutional, and contextual. 'Role' refers to the specific government function/governance level combination in the Public Administration framework of analysis, which generates sixteen possible regional government roles (4x4=16 matrix cells).

7.3.1 By regional innovation *problématique*

Do the six cases give an indication that the region's dominant innovation *problématique* triggers a particular role of regional government? Expressed differently: do regions with similar innovation system deficiencies display similar roles of regional government?

Of all the factors hindering the innovation performance in peripheral regions, the need to overcome their isolation is a pressing one. When building up all the missing elements in a peripheral regional innovation system is not feasible or financeable, regional government can play a pivotal role in connecting the region to other sectoral, national and global innovation systems, anchoring the region in a larger, multi-layered system of innovation governance. Regional government is to ensure the 'connection' of the region to these systems. Regional government can focus on building up those institutional elements that will allow the region to tap into new knowledge sources, gain access to new markets and sophisticated users, and to learn from good practice elsewhere (Koschatzky, 2000). The function of regional government considered beneficial for peripheral regions is what this study has labelled acting as 'a self-standing unit as part of a wider, multi-level governance system'.

Old industrial regions suffer from 'lock-in' and the greatest challenge is to bring about structural changes in the economy, making old technologies and old ways of working redundant, and replacing them with new alternatives, new institutions, new governance processes, and a new outlook on the region's future (Hassink, 2000). Regional government is expected to act as an 'agent of change', to conceive and set in motion a process that enables 'lock-in' to be overcome. A function very similar to what the EU has in mind with its 'smart specialisation' agenda.

Despite being an 'innovation-prone' society – unlike the other two regional innovation system types – with all the innovation-relevant actors and socio-economic factors in place favouring innovation, 'fragmentation' is a characteristic deficit of the regional innovation system in metropolitan regions. The various elements of the innovation system are fragmented, lack communication and cooperation, and are often in competition with one

another. It results in the region being stuck at a sub-optimal level of innovation performance. Regional government is expected to act as a 'community-builder', an actor that brings parties together and resolves divides, an actor that defines and brings to live the overarching 'regional interest' (Keating, 1998), an actor that brings focus and coherence to the system, and puts in place those actions that advance the functioning of the region as a genuine innovation community.

In the previous section, Table 7.1 and its visualisation in Figure 7.1 display the total of regional government roles found in the six case studies based on absolute numbers, irrespective of the role's relative importance in a particular region. In this section, Figures 7.2a and 7.2b use the same data, but organise the data differently to show the distribution of all roles found by government function (7.2a) and by governance level (7.2b), both by regional innovation system type. The use of the term 'region' in 'peripheral region', 'old industrial region', and 'metropolitan region' is short for 'regional innovation system'.

In terms of government function, all four government functions were found equally in the two peripheral region cases (2 counts per function); there is no dominant function associated with the peripheral innovation system type. The function of connecting the region to a larger, multi-layered system of innovation governance that regional government is expected to enact was found in the two peripheral region cases, but not as prominently as theory assumes and on par with the other three functions.

A similar remark can be made about the metropolitan regions. All four functions were found in the two metropolitan cases, showing no preference of one function over another. The function expected to be found in a metropolitan innovation system type –'embodying the regional innovation community' – was found, but it does not emerge as dominant from the two cases in this study. Instead, the function of 'change agent' is more pronounced (4 counts) than the other three functions. Concerning Hamburg, the change function was not undertaken to serve community building, but to create a more effective and efficient ITT support system. Concerning South Coast Metropole, it could be argued to be more the case given the policy emphasis on regional cluster building.

The old industrial region cases, in contrast, exhibit more of a pattern in terms of government functions found, although caution is required with only two case studies. The two functions most pronounced are those of 'public service provider' (5 roles in total found belonging to this function) and 'partner in a multi-level governance system' (4 roles in total found belonging to this function). On the other hand, the one function expected to be found – that of 'change agent' – was not found at all (0 counts) which is remarkable. The absence of this function could be interpreted as a confirmation of 'lock-in', as is the dominant presence of the other two functions which could be interpreted as serving the 'usual clients' and networking with the 'powers above'.

Figure 7.2a visualises the results of the pattern search for government function by regional innovation system type. Table 7.2a in Appendix 3 presents the data on which Figure 7.2a is based.

Figure 7.2a: Roles of regional government found, by government function and by regional innovation system type, in absolute numbers (n=6)
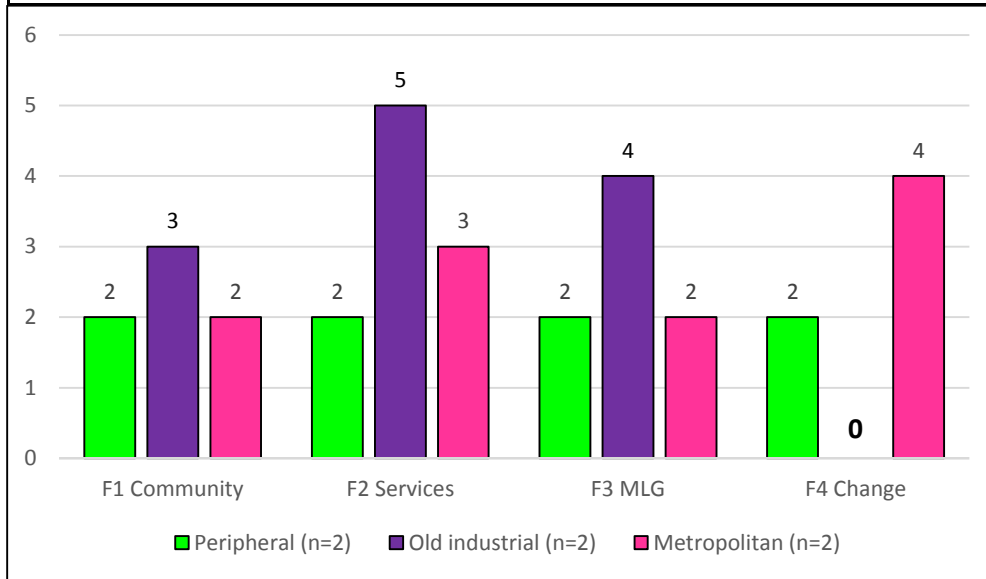
In terms of governance level, while all four levels were found in all three regional innovation system types, the regional governments in old industrial and metropolitan regions tended to operate more at the operational level, and regional governments in the peripheral regions slightly more at the procedural level. Figure 7.2b shows the results of the pattern search for governance level by regional innovation system type.

In terms of regional government roles, with 8 counts, the peripheral regions display the lowest number in regional government roles. In terms of variety, however, these 8 counts represent 8 different roles, covering 4 government functions and 4 governance levels. As such, they cover half of the 16 theoretically possible government roles.

With 12 counts, the old industrial regions display a higher number in regional government roles. These 12 counts represent 10 different roles, covering 3 government functions and 4 governance levels. As such, they cover almost two-thirds of the 16 theoretically possible government roles.

Finally, with 11 counts representing 11 different roles, the metropolitan innovation systems display the largest variety in regional government roles. These 11 different roles cover 4 government functions and 4 governance levels. As such, they cover more than two-thirds of the 16 theoretically possible government roles.

Figure 7.2b visualises the results of the pattern search for governance level by regional innovation system type. Table 7.2b in Appendix 3 presents the data on which Figure 7.2b is based.

Notwithstanding the limitations to establish patterns based on six empirical cases (n=6), it is still an interesting exercise to organise the same data differently. The first search for patterns has been undertaken to establish whether regional governments faced with a particular regional innovation *problématique* engage in a particular set of government roles. Reorganising the data by regional innovation system type do not seem to indicate that that is the case. Regions with similar innovation system deficiencies display a large variety of regional government roles. As the proverb goes, "many roads lead to Rome". What is interesting about

the old industrial regions is the fact that *none* of the four roles associated with the government function of 'acting as a change agent' was found, contrary to what theory expects.

Figure 7.2b: Roles of regional government found, by governance level and by regional innovation system type, in absolute numbers (n=6)
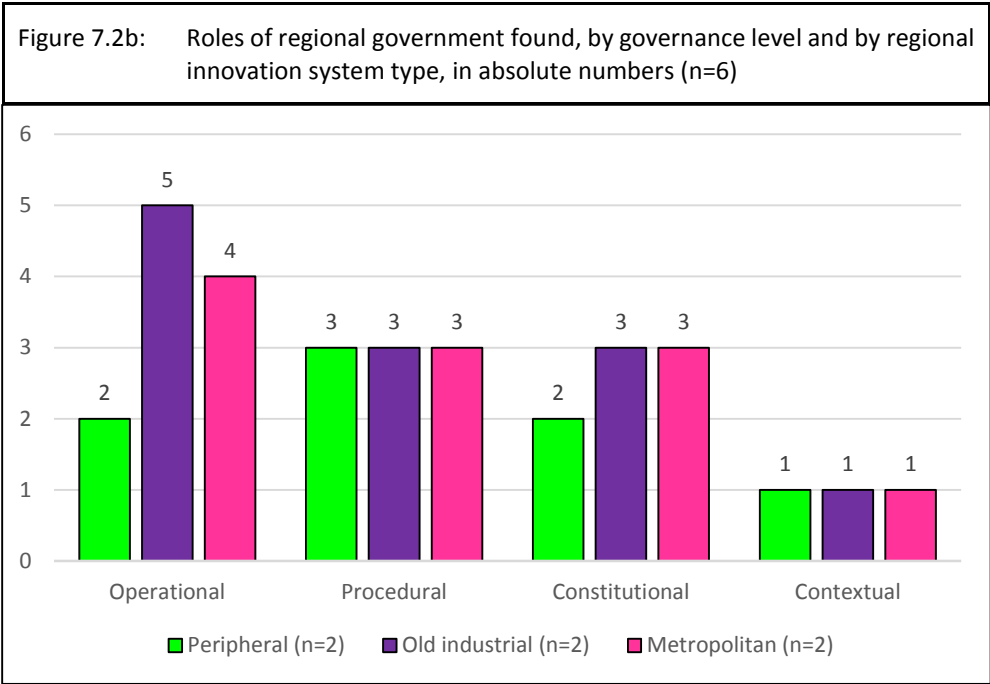
7.3.2 By administrative position of the region

Do the six region cases give an indication that the administrative position of the regional government organisation and its capacity to engage in 'authoritative decision-making' (Schakel, 2009) generates a particular role of regional government? Expressed differently: do regions with similar administrative positions within the nation-state display similar roles of regional government?

In this study, 'regional government' has been defined as a sub-national, regional tier of national government to which political power and/or administrative tasks have been allocated and which are executed within a given territory of that nation-state (Van Braam, 1986). A region's administrative position refers to the managerial room for manoeuvre – through either political devolution or administrative decentralisation – that a regional government organisation has within the spatial distribution of power in a government system. One of the key differences between federal and unitary states relates to the region's administrative position within the nation-state.

In unitary government systems, the value of achieving 'homogeneity' across the nation-state territory is valued as a governing quality resulting in a uniform, 'one-size-fits-all' approach to government policies and programmes. In federal government systems, the division of power between central and regional governments is not by political decision but is constitutionally defined. 'Regional discretion' – to tackle regional issues with customised policies – is held high as a value and is institutionalised in the government system (Lijphart, 1999). The Regional Innovation Systems literature considers contextualised policies addressing a region's particular innovation deficiencies a proviso for policy effectiveness. Due to the difference in authoritative decision-making power, this body of literature assumes that regional governments in federal government systems are better equipped for contextualised policy-making than regional governments in unitary government systems.

The two countries that represent these different government system types in this study are Germany – a federal system – and the United Kingdom – a unitary system. The other significance of these two countries is in the 'family of state traditions' mentioned in chapter 3. The United Kingdom is often portrayed as the textbook example of government that sees its function primarily in terms of 'delivering public services and policies'. Germany on the other hand is more associated with the government function of 'being a self-standing part of a larger, multi-level governance system'. Being part of a federal system, regional governments are seen as being more at ease with and capable of functioning in inter-linked systems.

The second search for patterns will reorganise the data on regional government roles by government system type. The three German regions, part of a federal government system, will be grouped and compared with the three British regions, part of a unitary government system.

Figures 7.3a and 7.3b use the same data from Table 7.1, but organise them differently to show the distribution of roles found in the six study cases by government system type, sub-divided by government function (7.3a) and by governance level (7.3b). Tables 7.3a and 7.3b in Appendix 3 present the data on which Figures 7.3a and 7.3b are based.

In terms of regional government roles, the German regions engaged in 18 of the 31 roles found, whereas the British regions engaged in 13 of the 31 roles found. The 18 roles represent 9 different roles; the 13 roles represent 11 different roles. What it means is that the German regions enacted more roles in the policy design process but less different ones, whereas the British regions enacted less roles but more diverse ones.

In terms of government function, most of the regional government roles found in the German regions belong to two government functions: 'providing public services and policies' and 'being a self-standing unit in a larger system'; a manifestation of the latter function is conform what theory expects. Of the 18 roles found, 15 belong to these two government functions, covering more than four-fifth (83%) of all German regional government roles found. The 'acting as an agent of change' function was not found in any of the German regions. The 3 roles found for the 'regional community' function represent 3 different roles but all belonged to one region: Aachen.

As far as the British regions are concerned, the 13 roles counted covered all four government functions. Most of the regional government roles found belonged to the function of 'change agent', closely followed by the 'regional community' one. Together, these two government functions make up 10 of the 13 roles found, covering more than three-quarters (77%) of all British regional government roles found. Given the limited 'authoritative decision-making powers' at regional level, finding these two government functions being so prominently enacted by the British regions investigated in this study is surprising. Finding only 2 counts of roles that represent the role of 'public service provider' is equally surprising. Both these roles belong to one region: the North East of England.

The majority of regional government roles found in both Germany and the United Kingdom belong to two government functions, whereby both functions differ between these countries. This country divide does not apply to the old industrial regions. The RITTS project leaders in both Germany and the United Kingdom perform roles that belong to the same functions of 'public service provider' and 'multi-level governance partner'.

Figure 7.3a: Roles of regional government found, by government function and by country, in absolute numbers (n=6)
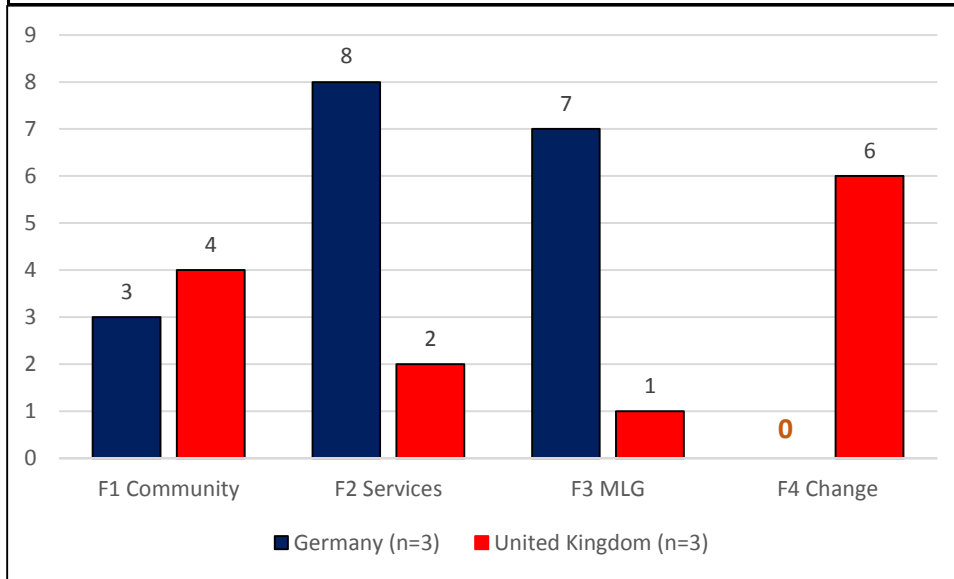
In terms of governance level, both German and British regions mostly operate at the operational level (7 respectively 4 counts), closely followed by the procedural level (6 respectively 3 counts). Together these two levels make up 13 of the 18 roles found for the German regions (72%) and 7 of the 13 roles found for the British regions (54%).

The contextual governance level, however, is completely absent in the German regions (0 counts), whereas in the British regions it is at par with the constitutional and procedural level (3 counts each) and very close to the operational level (4 counts). The regional government roles enacted in the British regions are more spread across all four governance levels compared to the German regions. The absence of the contextual level in German regions, regions that belong to a government system that has institutionalised the possibility for contextualised policy-making, is surprising.

The second search for patterns has been undertaken to establish whether the administrative position of regional government within its government system induces a particular set of government roles. Keeping in mind methodological limitations, reorganising the data by government system type seems to indicate that some correspondence exists.

Similarities in regional government functions to engage in policy design seem to exist within each country. All three German regions engaged in roles of which the majority belonged to two government functions. The three British regions displayed a more varied role uptake across government functions and governance levels, although two functions – and both different from Germany – dominated in two of the three regions. However, this finding does not apply to the old industrial regions in both countries, and the government function preference seems to appear stronger in the German regions than in the British regions. That is why caution is to be applied in interpreting this finding as a 'country effect'; the British findings are too mixed and the number of regions investigated (n=6) is too small to establish whether this finding is a pattern or a random finding.

What was *not* found is equally interesting, perhaps even more because it demonstrates the existence of empirical variety regardless of theoretical assumptions. The British regions displayed less government roles, but encompassed a larger variety in government functions

and governance levels, compared to the German regions. This finding is remarkable given the 'one-size-fits-all' tendency of unitary government system types.

Figure 7.3b: Roles of regional government found, by governance level and by country, in absolute numbers (n=6)

	Operational	Procedural	Constitutional	Contextual
Germany (n=3)	7	6	5	0
United Kingdom (n=3)	4	3	3	3

Germany (n=3) ■ United Kingdom (n=3) ■
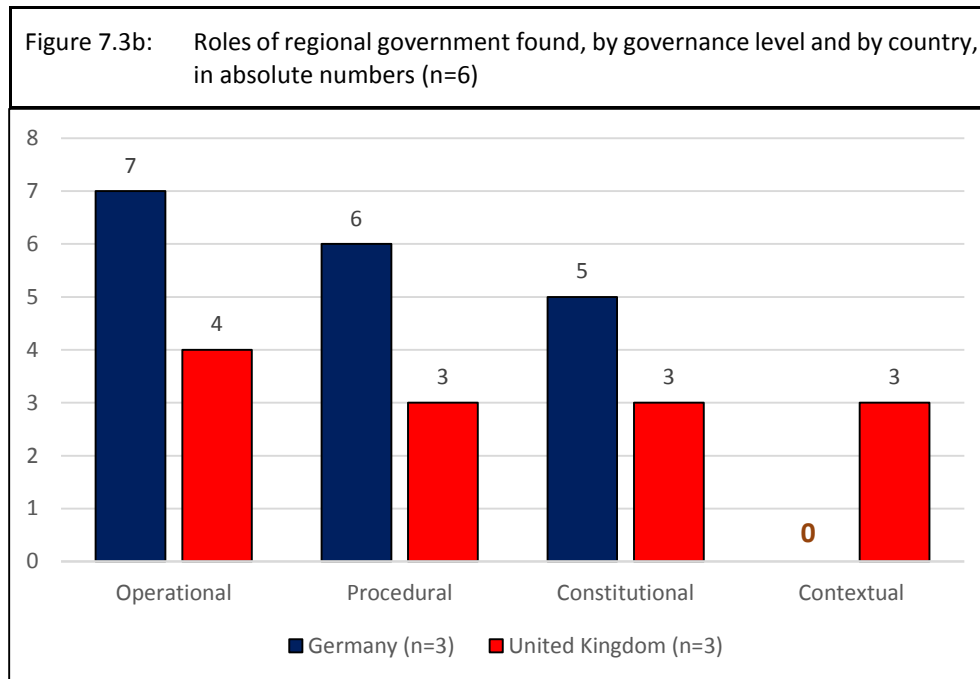
Different from theoretical expectations, the government function of 'public service provider' was found in only one British region, compared to being the most important government function in Germany in absolute counts, and found in all three German regions. The most important government function in the United Kingdom, on the other hand, was found to be that of 'change agent' closely followed by that of 'regional community embodiment'.

Different from theoretical expectations is also the finding that none of the German regions engaged in policy design from the government function of 'change agent', and none of the government functions were executed at the contextual level. These findings are remarkable given that – by law – the German regions are bestowed with a capacity to apply 'regional discretion' in policy-making to cater for societal needs in regionally different ways.

7.3.3 By regional government organisation type

In the RITTS programme, two types of regional government organisations were allowed to participate. Firstly, this was a territorial, general-purpose, democratically elected regional government organisation whose accountability is downwards to the voters. Secondly, this was a functional, mission-mandated organisation type that is a single-purpose, public-funded regional government organisation whose accountability is upwards to the parent organisation. Do the six region cases give an indication that the type of regional government organisation – general-purpose versus single-purpose – induces a particular role of regional government? Expressed differently: do regions with similar types of regional government organisations in charge of the policy design display similar roles of regional government?

In four of the six regional cases, functional government organisations made up the RITTS project leader (Neubrandenburg, Highlands and Islands, Aachen, and North East of England). The two regional government functions most frequently undertaken were those of 'providing public services' and 'acting within a larger, multi-level system'. Within those two functions,

the roles most commonly found – based on absolute counting – were 'responsive problem-solver' and 'relations-handler' (both 3 counts), found in three of the four regions with a single-purpose government organisation in charge of the policy design. The regional government roles of 'solution-enabler', 'pro-active networker', and 'regional interest establisher' were found in two of the four regions (2 counts each), 8 roles were found in one region, and 3 roles were not found in any of the four regions.

In terms of governance level, the level that was most commonly found for single-purpose regional government organisations was the operational level (7 counts), closely followed by the procedural level (6 counts), the constitutional level (4 counts), and finally the contextual level (2 counts).

As with the previous Figures, Figures 7.4a and 7.4b use the same data from Table 7.1, but organise them differently to show the distribution of roles found in the six study cases by regional government organisation type, sub-divided by government function (7.4a) and by governance level (7.4b). Tables 7.4a and 7.4b in Appendix 3 present the data on which Figure 7.4a and 7.4b are based.

In two of the six region cases, territorial organisations made up the RITTS project leader (Hamburg and South Coast Metropole). For these general-purpose regional organisations, the two regional government functions most frequently undertaken were those of 'change agent' and 'providing public services'. Keeping in mind that there are only two cases (n=2), the variation found is spread across eleven roles with 1 count each; 7 of those 11 roles belong to the two previously mentioned functions; 5 roles were not found. Like the single-purpose organisations, the governance quality level that was most commonly found – based on absolute numbers – was the operational level (4 counts), followed by the procedural and constitutional level (3 counts each), and finally the contextual level (1 count).

Figure 7.4a: Roles of regional government found, by government function and by regional government organisation type, in absolute numbers (n=6)
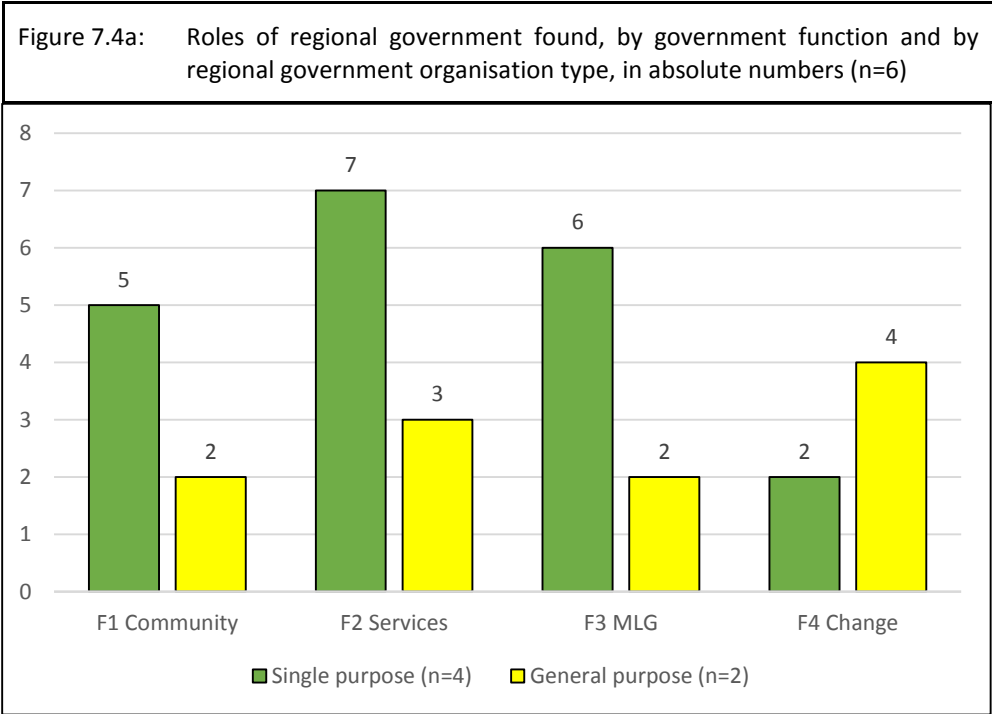
Comparing both types of regional government organisations, the operational governance level is for both types of organisations the most often counted, it is the most preferred level of operating. Similar for both types of regional government organisations is also the finding that a great deal of policy action is undertaken at both the procedural and constitutional level; the least action is undertaken at the contextual level.

In terms of government function, both types of regional government organisations tend towards seeing 'public service provision' as their main function. For the functional, mission-mandated organisations, this is in line with expectations. Providing public services for innovation support is for three of the four project leaders (Neubrandenburg, Aachen, North East of England) the most frequent, most important function. What is surprising, is that two of the four single-purpose organisations (Highlands and Islands, Aachen) very much see themselves as 'regional community embodiment' and 'change agent', functions that one would expect of territorial, area-based rather than function-based regional government organisations.

To find these two government functions – 'regional community embodiment' and 'change agent' – enacted by a general-purpose, democratically elected regional government organisation such as the RITTS South Coast Metropole project leader, should not be surprising. Or perhaps it should, given that the South Coast Metropole Partnership is a voluntary collaboration between five local boroughs, an artificial administrative construct in a unitary government system.

Although Hamburg also enacts the government function of 'self-standing unit as part of a larger government system' – in line with theoretical expectations – the most important function is 'public service provider', similar to the single-purpose, mission-mandated organisations, which regional government executes at three different governance levels.

Figure 7.4b: Roles of regional government found, by governance level and by regional government organisation type, in absolute numbers (n=6)
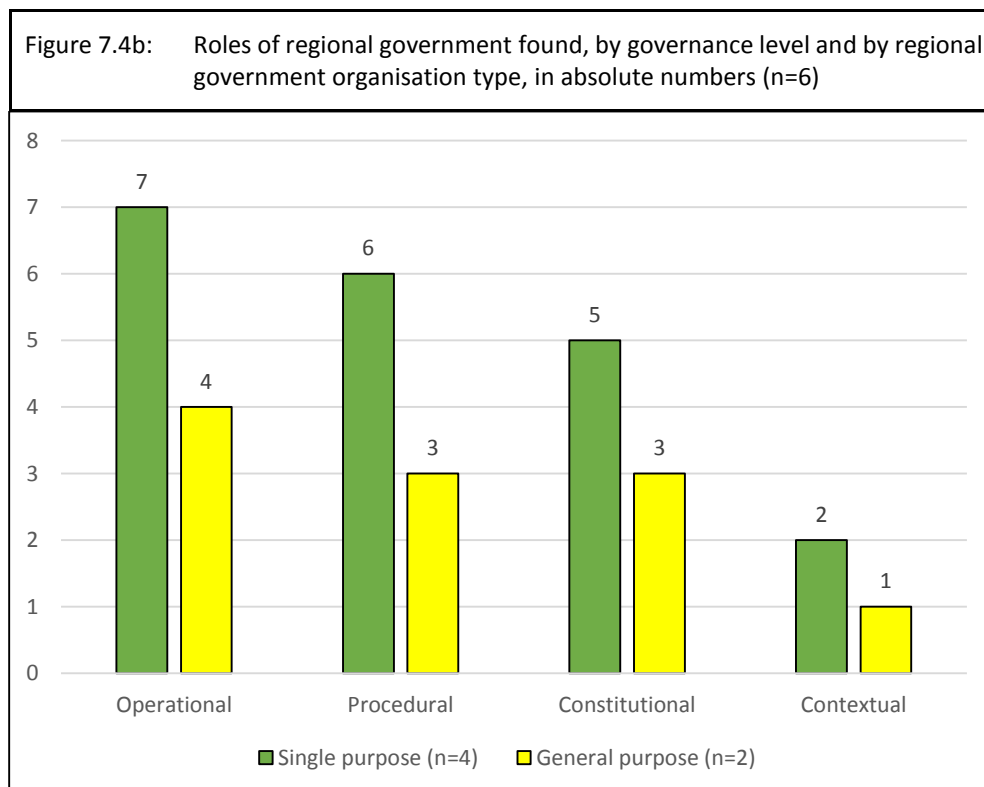
With the methodological limitations on establishing patterns based on four versus two empirical cases even more critical, it is nevertheless an interesting exercise to organise the data by regional government organisation type. It shows that all four government functions were executed at all four levels of governance by both single and general-purpose regional government organisations alike in the six region cases. It shows that for both organisation types the most often found government function is the 'public service provider' one, and is for both organisations most often executed at the operational governance level. The findings therefore do not indicate that a particular regional government organisation type triggers a particular regional government role.

In Appendix 4, the three pattern searches presented in this section – by regional innovation system type and its dominant regional innovation *problématique*, by government system type and the region's administrative position within that system, and by regional government organisation type in charge of the policy design process – are summarised in three heat maps.

7.4 Answering the research question

The research question of this study is to what extent and if so, how does regional government matter in the design of 'context-specific' regional innovation policy. **With 15 of the 16 possible regional government roles found among the six region cases investigated, this study concludes that regional government matters.**

The two roles described in the Regional Innovation Systems literature as to how regional government matters for the design of 'context-specific' regional innovation policy are evidenced in this study. Regional government matters for the design of policies due to its region-specific knowledge: it matters in the role of 'responsive problem-solver'. Regional government matters for bringing different stakeholders together due to its formal administrative position representing 'government' in the region (and being able to act 'above' the parties): it matters in the role of 'relations-handler'. Both these roles were most often found among the six regions. They are an expression of the government functions of 'providing public services and policies' and 'acting as a self-standing unit in a larger, multi-level governance framework' at the operational governance level. Policy success is assessed on its 'responsiveness' to regional problems and societal needs.

This strong managerial take on policy development in four of the six regions is in line with academic literature on Regional Innovation Systems. Based on this study, it also seems to point to an approach most familiar to regional government organisations, whether single-purpose or general-purpose, and whether part of a federal or unitary government system. In addition, the purpose of the RITTS programme, addressing the region's innovation *problématique* through a consensus-building process among the region's key stakeholders, and the way it was set up by the European Commission as a staged process called for a managerial approach. The operational level is the most frequently found governance level in this study. To the RITTS project leaders, the RITTS project was first and foremost a decision-making process that required managing: that is, producing deliverables in collaboration with others within a given period and with given resources.

At the same time, the study found a great deal of variety in regional government roles among the six regions. Not only that the two previously mentioned functions were executed at other

governance levels besides the operational one. All four government functions were found at all four governance levels, with the exception of the 'regional power builder' role. In short, the 'variety' found relates to the different government functions as well as the different governance quality levels at which each function was executed. **This study, therefore, concludes that regional government matters for the design of 'context-specific' regional innovation policy in more ways than theory seems to assume.**

'Variety' also relates to another finding. What emerged from the case analysis in chapter 6 is that all regions – without exception – engaged in multiple roles during the policy process to design their 'context-specific' regional innovation policy. The number ranged from 3 different roles in RITTS North East of England to 9 different roles in RITTS Aachen. The number of governance levels at which these roles were executed ranged from 2 in RITTS Neubrandenburg and RITTS North East of England to 4 in RITTS South Coast Metropole. The mix of roles and their importance differed per case.

What the regions have in common, though, is that each of the six regions exhibited one dominant role: a particular government function being executed at a particular governance level. This role was either supported or complemented by one or more other regional government roles. The way in which the project leader viewed 'policy success' in the framework of RITTS seemed to be a factor shaping the role that would become the dominant one as well as the other roles. Whatever role would become the dominant role seemed to be linked to the region-specific motivation to participate in the RITTS programme. **This study concludes that designing contextualised policy involves multiple roles that are executed simultaneously and interchangeably throughout the policy process by regional government. This study also concludes that real-life regional governments define 'policy success' in different ways of which 'responsiveness' is one, alongside 'legitimacy', 'resilience' and 'congruence'.**

In an attempt to make sense of the variety found, a pattern search was undertaken with respect to the study's two variables. Concerning the first variable, the question guiding the pattern search was whether regions with similar innovation deficiencies (peripheral, old industrial, metropolitan innovation systems) display similar roles of regional government. To that end, the six region cases were grouped in three groups of two regions with each group representing a particular regional innovation *problématique*. No proof to the claim was found that regions with similar innovation deficiencies display similar roles of regional government. The old industrial regions are the only two cases where overlap in regional government roles was found; the peripheral and metropolitan regions exhibited very different roles from another. **The study concludes that no indication is found that the region's dominant innovation *problématique* triggers a particular role of regional government.**

Concerning the second variable, the question guiding the pattern search was whether regions with similar administrative positions within their nation-state display similar roles of regional government. Two types of patterns were investigated.

The first one investigated the correspondence between regional government roles and the degree of regional autonomy that a region enjoys within its government system to design and deliver a 'customised' regional innovation policy (also referred to as the region's 'authoritative decision-making power'). To that end, the six region cases were regrouped according to their government system type, comparing the three German regions, part of a

federal government system type, with the three British regions, part of a unitary government system type.

Although some correspondence was found between government system type and government function preference for the German regions, the results for the British regions are too varied and both old industrial regions, from Germany and the United Kingdom, are too similar in government function preference to claim a 'country effect'. **The study concludes that the results among the six regions are too mixed to claim a country-related preference for particular government functions over others.**

One 'country effect', however, was evidenced in the multiple-case analysis in chapter 6 and deserves being mentioned. All the German project leaders approached the management of their RITTS project in a similar way: systematic, methodical, data-driven, in a step-by-step 'engineer style', but also more technocratic and bureaucratic. '*Legitimation durch Verfahren*' (Toonen, 2014) was an administrative value held high in all three German RITTS projects. The British project leaders seemed to have in common their far more pragmatic and utilitarian approach in dealing with an EU-funded programme. It materialised in assessing first how the RITTS project could serve regional interests best. It also materialised in changing the RITTS 'rules of the game' unilaterally if that suited regional objectives better.

The second pattern investigates the correspondence between regional government roles and the type of regional government organisation in charge of the policy design, irrespective of government system. To that end, the six regions were again regrouped, this time comparing the four project leaders whose organisation represents functional, single-purpose, mission-mandated regional government with the two project leaders who represent territorial, general-purpose, democratically elected regional government organisations.

No proof was found for the claim that regions with similar regional government organisations display similar roles of regional government. Both functional and territorial organisations were observed performing any of the four functions at any of the four governance levels. If there is any pattern, it is that both organisation types perform the function of 'public service provider' most often, and they execute the four functions most often at the operational level of governance quality. **The study concludes that no indication is found that a particular regional government organisation type triggers a particular role of regional government.**

7.5 Conclusions

'Context-specific' regional innovation policy has been defined in this study as public policy that seeks to strengthen companies' ability to innovate by tackling the specific 'systemic failures' of the regional innovation system in which these companies operate. **Understanding how 'context-specific' regional innovation policy comes about requires a differentiated conceptualisation of the role of regional government. This is the overall conclusion of this study.**

A differentiated conceptualisation of the role of regional government allows to capture *the variety of roles* that regional government takes on in real life to deliver such a policy as well as capturing the variety in roles *between regional governments*.

The variety of roles found in this study demonstrates that public policy-making operates at different levels of decision-making. Each regional government engaged in a

multitude of different roles during the policy process undertaken at different governance levels to succeed at delivering a 'context-specific' regional innovation policy. Kiser and Ostrom's (2000) 'three worlds of action' interact interchangeably and simultaneously when designing policy. Together, they "form a nested system of decision-making, in which higher levels guide and constrain decisions at lower levels, but at the same time change of such parameters may be initiated by lower-level actions through elaborate channels of feed-back" (Bogason & Toonen, 1998:16).

In order to capture the impact of these 'three worlds of action' on decision-making, the analysis has to take place "at three related but distinct levels of analysis" (Kiser & Ostrom, 2000:60). Higher-order levels of collective action can facilitate as well as constrain lower-order levels of action (Kiser & Ostrom, 2000). The different analytical lenses in the Public Administration framework allow zooming in on different levels of collective action and allow mapping their interaction within a given hierarchical order.

In addition to these three levels of analysis, a fourth level of analysis was added in this study. What did adding a contextual level of analysis in the Public Administration framework bring? Applying a differentiated conceptualisation to analyse six policy design processes brought to the fore a 'contextual' variable on policy-making which seemed to frame collective action at the regional level. It generated differences in policy choices among seemingly similar regions. It operated at the meta-level and framed how the other governance levels came alive. For the investigation of regional phenomena, the contextual level matters, and it matters in a wider sense than delivering 'context-specific' policy solutions to region-particular problems.

For the investigation of regional phenomena, the contextual level of analysis matters because it highlights 'territorially-embedded factors' that are at play in regions and are unique to each region (Rodríguez-Pose & Crescenzi, 2006). These factors include the specific geological and climatological conditions linked to the region's physical location on the planet, but mostly they refer to the region's unique linguistic, historical, and cultural identity within a national setting. 'Territorially-embedded factors' create the meta-frame for other levels of collective action at the regional level. Understanding their impact matters for understanding regional policy decisions and cross-regional policy variation.

Whereas both the contextual level and the constitutional level affect decision-making processes at the regional level, they each generate a different effect. It requires analysing each level separately based on different analytical dimensions and different quality criteria to distil this effect. The example of Highlands and Islands is illustrative in this respect.

At the constitutional level, the RITTS project leader shared with the other RITTS regions in the United Kingdom the 'British way' of organising policy design as outlined earlier. Without contextual level of analysis, one would be inclined to qualify the RITTS project as 'a mere study project', unsuccessful as a means to create regional change. By adding the contextual level of analysis, a different interpretation of the meaning of the RITTS project and its contribution to regional change crystallises. RITTS is part of a larger portfolio of regional government actions that all serve to provide the region with a university of its own. This long-standing dream is unique to this particular British region and it permeates collective action at all other governance levels. As a meta-frame, it makes understood the decisions taken at the procedural and operational governance levels of the RITTS Highlands and Islands project.

A differentiated conceptualisation of the role of regional government also allows to capture the different governance levels at which these roles are executed empirically, reflecting *different administrative values* of policy design.

Whatever role became the dominant role seemed to be linked to the region-specific motivation to participate in the RITTS programme. With each governance level representing a particular set of administrative values, what was considered a successful deliverable of the RITTS project – a 'context-specific' regional innovation policy – differed per region and included 'responsiveness' to regional problems, 'legitimacy' to regional government actions, 'resilience' in dealing with change and generating impact, and 'congruence' in designing policy measures according to 'time and place'.

In judging the administrative quality of government, Hood speaks of 'three families' of related administrative core values (Toonen, 2014). In addition to the administrative values distinguished by Hood (1991), a fourth administrative value of governmental governance has been added in this study. Each of these levels represent administrative values that can be complementary and mutually reinforcing as well as conflicting and incompatible. As Toonen (2014:504) puts it: they "constitute interdependent layers of administrative quality within governmental systems". When designing policy, these different value systems meet and it is the role of government to find common ground, develop workable compromises, accept trade-offs, and handle opposition. The interaction of these different and sometimes conflicting administrative values causes policy design to be a demanding and time/place specific process. The need to marry conflicting values throughout the policy process was seen in each of the RITTS projects investigated in this study. It led some RITTS project leaders to refer to their RITTS project as having opened up Pandora's Box. If a system is to survive, all values need to be catered for at some point in time to prevent decline (Toonen, 2014:504).

Have the six regions delivered a 'context-specific' regional innovation policy? The different analytical lenses in the Public Administration framework focus on different attributes of the policy-making process and apply different quality criteria. If the assessment were to stay at the operational level, the instrumental-economic focus on 'responsiveness' would find elements of a 'context-specific' regional innovation policy in some regions. However, none of the regions would pass the theoretical benchmark set by Regional Innovation Systems theory, with too many innovation system deficiencies left unaddressed by policy action.

If the assessment were to 'move up' to include other governance levels, different dimensions of policy design would come to the fore as well as different quality criteria to measure policy success. Depending on how the region had implemented them, these features could very well qualify the policy as 'context-specific'. At the procedural level, for example, it matters a great deal for policy success, defined in terms of 'legitimacy', to involve the right regional stakeholders in the decision-making process to produce better decisions. At the constitutional level, it matters a great deal for policy success, defined in terms of 'resilience', to have the right organisation in charge of policy design, one that is competent and respected, with a solid reputation in the region of 'making change happen'. At the contextual level, it matters a great deal for policy success, defined in terms of 'congruence', to apply 'regional logic' in all of government's actions in pursuit of a regionally shared vision and future.

Combining different analytical lenses allows for a better understanding of cross-regional policy variation because it opens up different 'layers of explanation' (Allison & Zelikow, 1999). The assumption of the Regional Innovation Systems theory that regions endowed with

authoritative decision-making powers are better able to design 'context-specific' regional innovation policy was not evidenced in this study. One 'country effect', however, was evidenced in terms of management style of the RITTS project. As outlined earlier, all German project leaders approached the management of their RITTS project in a similar way as did all British project leaders. This German-British divide could indicate the existence of a national policy style, a country-specific way 'to go about things' (Richardson, 1982; 2013) that is defined at the constitutional level and frames collective action at the procedural and operational level. If the search for 'congruence' is, however, the guiding principle for regional government intervention, the contextual level joins the constitutional level as meta-frame. Both levels affect lower-order levels of decision-making, as illustrated by the Highlands and Islands RITTS project. Their effect, however, is different: the 'contextual effect' seems to be in giving government intervention its direction, whereas the 'constitutional effect' seems to be in shaping the style of government intervention.

In this study, a Public Administration framework of analysis has been developed based on a differentiated conceptualisation of the role of regional government. It has enabled the delivery of additional insights about 'context-specific' regional innovation policy and it has contributed to a better understanding – conceptually, analytically and empirically – of the role of regional government as a policy-making actor to develop such a policy.

7.6 Limitations

This study has employed a descriptive, qualitative, multiple-case study research method. This approach has allowed an empirical inquiry of the phenomenon to be undertaken within the phenomenon's real-life context. It has made it possible to establish not only *what* 'context-specific' regional innovation policy is, but also *how* this policy comes about in real-life. It has opened up the black box of policy-making.

Despite the importance attached to regional government in the Regional Innovation Systems literature, hardly any attention is devoted to government as an actor and the way in which this actor reaches policy decisions. Paraphrasing Pavitt (1999), one could say that similar to the blind spot of many economists in ignoring what goes on inside innovating companies, they display a similar blind spot when it comes to government. Government is too easily treated as a black box in which policy-making processes inside government, the participation of different actors in these processes and the effect of different patterns of interaction on policy choices are ignored. However, all of this matters if we want to understand how 'context-specific' regional innovation policy comes about (or not). This is why this study was set up the way it is.

Although the study's research method can indicate patterns, its limitation is that it cannot explain patterns. Another limitation is in the operationalisation of the Public Administration framework of analysis. At least two possibilities exist to overcome the limitations of this study.

Firstly, the multiple-case study research method employed in this study could be expanded to include all RITTS regions that took part in the programme between 1994-2000. With a population of 72 regions instead of 6, the empirical research gains a different scale and allows for a deep study of many regions representing different innovation contexts set in different government systems. It would allow undertaking the three pattern searches in this study across a larger population of regions. With a larger number, it might be easier to

discover patterns and distinguish these from random findings. It might also be easier to find commonalities, not only in the effects that the study's variables generate, but also in the factors that cause these (and other) effects.

Secondly, the heuristic nature of the Public Administration framework could be complemented and/or reinforced with additional theory-driven research, for example to better understand the study's dependent and independent variables, the relationship between the variables, and the direction of these relationships. The Public Administration matrix could benefit from an operationalisation that allows a quantitative measurement of the matrix cells in order to compare different regions on a scale of measurement beyond the nominal and ordinal scales.

7.7   Relevance

7.7.1   Theoretical relevance

The RITTS projects brought to the surface the tension that characterises present-day regional government, caught between the "conventional main variables [of] institutions, hierarchy and territoriality [in which regions operate] as part of hierarchical arrangements of territories" (Herrschel & Tallberg, 2011:7) and the new demands placed on regional government where regions are "increasingly understood as rather more virtual constructs on the basis of shared agendas and policy objectives between actors" (Herrschel & Tallberg, 2011:8). The theoretical relevance of this study resides in its contribution to a more nuanced and in-depth understanding of the role of regional government in bringing this new concept of the region as 'policy space' to life. By adding a Public Administration viewpoint, the study has complemented the important work done by Regional Innovation System scholars by making better understood how regional actors, in particular regional governments, are behaving (and deciding) the way they do.

The empirical inquiry undertaken in this study brought to light how much the policy process is still viewed in a rational, monocentric way, divided up in sequentially linked activities taking place in discrete stages, and driven by the 'logic of applied problem-solving' in which 'problems matter' (Howlett & Ramesh, 2003; Hoogerwerf, 1987). This 'classical' view on the policy process has– rightfully – been criticised on a number of grounds, the most important being that actors do not behave fully rationally. As John (2002: 33) puts it "(…) the rational actor model conceives policy to be a logical, reasoned and neutral way organisations assess problems, propose solutions, then choose and carry out courses of action." In reality, actors cannot be assumed to have perfect knowledge of the problem in all its facets, to be aware of all the possible solutions, to foresee all the consequences of each alternative solution, to choose the best possible option in a technical, conflict-free manner, followed by effortless, automatic implementation and non-political, value-free evaluation. In addition, a policy can be considered successful on a number of grounds besides goal attainment (Allison, 1971; Toonen et al., 1998) and policy failures can occur for a variety of reasons unknown in the rational actor perspective (Bovens et al., 2001).

What was observed in this research was that progressing from one stage to the next in the policy cycle was far from 'automatic' in all six region cases. The output of the previous stage was not automatically meaningful input for the next stage and required 'translation'. By the time the RITTS project was ending, multiple 'translations' emerging from multiple discussions among multiple actors had already taken place. As a result, the final policy decision

at the end of the policy process did not necessarily reflect the original problem definition at the beginning of the policy process, nor did the participants see this as problematic. According to Pressman and Wildavsky (1973:123) this is because "(…) decisions are made through social mechanisms – exchange and bargaining by many minds – aimed at correcting error and securing agreement (rather than avoidance of error and a single proper choice) and administered by reacting to other participants rather than by sending down orders and expecting obedience". What the empirical data and case analyses in this study show is that policy is very much the result of interaction, not of problem definitions. Policy choices are negotiated solutions for which consensus could be achieved among a multitude of autonomous, yet interdependent actors (Marcussen & Torfing, 2007).

Understanding policy practice is, therefore, better served with an incremental, 'post-classical' view on the policy process in which policy-making is seen as a polycentric process involving many actors who operate under conditions of 'bounded' rationality (Korsten & Toonen, 1993). This study has attempted to do so by analysing how regional government actually behaves as opposed to assuming how this actor behaves based on theoretical premises. This study has added a – in my view much needed – Public Administration viewpoint that puts the rational-actor, instrumental-economic approach of the Regional Innovation Systems theory in perspective. By combining these academic schools of thought, better hypotheses can be constructed and tested to explain why some regional governments are more successful than others in strengthening the innovation performance of their region.

7.7.2   Policy relevance

The empirical inquiry undertaken in this study placed the proclaimed importance of formal 'government' competencies at the regional level in perspective and demonstrated the importance of informal 'governance' competencies in the policy process – such as getting everybody on board, getting actors to agree, handling conflicts, obtaining and using stakeholders' inputs, influencing policy agendas set by national and international policy organisations, rallying partners around a shared vision of the region's future, building an 'innovation community', instilling a sense of 'regional pride', and the like. Whereas 'government' type competencies are *allocated* to regional government – either constitutionally or by political decision – 'governance' type ones can be *acquired*, developed with the help of EU programmes such as RITTS and its sister programme RTP/RIS, for example. This idea of 'learning' gives hope to all regions that want to make a difference, regardless of their regional innovation *problématique*, the degree of regional autonomy allocated, or the type of regional government organisation in charge.

The policy relevance of this study resides in the fact that it has empirically demonstrated the wide variety of roles that regional governments perform in the optimisation of their region's innovation system. The fact that this variety of roles was found in both German and British regions alike illustrates that regions not equipped with extensive planning and programming powers are not 'doomed', as theory seems to imply. A better understanding of the possibilities to act at the regional, sub-national tier of government is empowering. With increased understanding of the possible room for manoeuvre, these regional government actors can apply this knowledge to do better and to design policies that make a difference to the region's innovation performance. The European Commission – as financier of these pilot programmes and the 'smart specialisation' successor programme – was and still is convinced that stronger policy capacities at the regional level are beneficial to arrive at stronger regional

capacities for research and innovation. The latter is well known as the only remaining factor contributing to sustainable economic growth and prosperity in a globalised world.

8

Outlook

"There is no discovery without risk and what you risk reveals what you value"

Jeanette Winterson, CBE, English poet and novelist

8.1 Introduction

The previous chapter presented the research findings of this study and answered its research question. This final chapter outlines the study's key findings in the context of strategic policy needs and academic research agendas. This chapter is organised around five questions which are answered in their respective sections. Section 8.2 examines how 'contextualisation' of the regional innovation policies investigated in this study was perceived by the European Commission and by the RITTS programme participants. Section 8.3 outlines the conditions favouring contextualised policy-making which have been observed in this study, including the impact of the RITTS programme itself. Section 8.4 considers the added value of the Public Administration matrix used in this study, as well as its limitations in better understanding contextualised policy-making. Section 8.5 deals with the smart specialisation agenda and its implications for the role of regional government in the future. Section 8.6, finally, proposes three aspects of a possible future research agenda.

8.2 About the extent of contextualisation observed

How was 'contextualisation' of the regional innovation policies investigated in this study viewed by the European Commission and by the RITTS programme participants? As a pilot programme, neither the European Commission nor the programme participants were in a position to foresee the outcomes of the RITTS programme. What was surprising though, given the mandatory format of a RITTS project, was the enormous variation in programme outcomes, both in terms of policy measures and policy processes. One could argue that this is in itself a sign of 'contextualisation' at work given the heterogeneity of Europe's regions.

In terms of policy output, the types of regional innovation strategies ranged from 'picking winners', focusing on key companies in the region and key technologies to support small and medium-sized enterprises (SMEs) by improving their 'knowledge capacity', to establishing a new Technology Transfer Agency, which was intended to work as a 'one-stop-shop' for regional firms to abolish overlapping and competing organisations (Corvers, 2005).

As far as the policy design process is concerned, some regions opted for wide-ranging consultations with regional stakeholders and leading regional firms, whereas others opted for less regional involvement in favour of 'expert' advice from a team of international consultants. Certain regions set up large Steering Committees incorporating more than fifty regional organisations to ensure regional consensus, whereas others worked with a small team of three or four key actors whose commitment to the project was considered crucial to its success. Some regions launched their regional innovation strategy at a large RITTS conference to ensure it received wide press coverage, whereas others refrained from any organised form of information dissemination under the RITTS banner (Corvers, 2005).

In retrospect, it can be said that 'contextualisation' was viewed differently by the European Commission and the programme participants. For the European Commission, 'contextualisation' meant investigating region-specific bottlenecks in the regional innovation system, addressing region-specific innovation problems, and resolving region-specific mismatches between the supply of innovation-relevant support services and firms' demand for these services. For the European Commission, 'contextualisation' was driven by policy content. For the programme participants, 'contextualisation' was driven by policy process. The programme participants' focus was on inviting the right people and the right institutions to the debate and committing them to the end result. Their definitions of 'right' varied but

centred on such aspects as having the consensual elite in the region on board, convincing institutions with veto power to support RITTS, and ensuring buy-in from organisations crucial for implementing and/or funding the strategy. The European Commission was concerned with seeing evidence-based analyses performed on the region's innovation system as the basis for informed decision-making. This would enable strategic choices to be made that would shape the region's future. The programme participants were concerned with seeing practical innovation measures result from the RITTS project. These measures needed to operate within the regional government's scope of manoeuvre and deliver visible results within a relatively short timeframe.

8.3 About the conditions favouring contextualisation

Across the six case studies, which contextual conditions helped realise successful 'context-specific' regional innovation policies? More generally, what impact did the RITTS pilot programme have on helping regions to design this type of policy? To start with the latter, the European Commission's view on what constituted a 'context-specific' regional innovation policy was inspired by the regional innovation systems literature. Different contexts generate different innovation problems, requiring different policy remedies. In practice, however, similar RTTS regions sometimes proposed different solutions, and vice versa, different regional contexts generated similar RITTS policy measures. Although the extent to which regions managed to develop a contextualised and strategic innovation policy (as envisaged by the European Commission) varied, both RITTS and RTP/RIS projects generated positive impacts in the participating regions in several respects[36] (Charles et al., 2000; Boekholt et al., 1998).

These projects brought in a much-needed move towards strategic thinking for innovation-oriented regional development. Innovation was put on the political agenda, which resulted, in some regions, in a significant increase in public expenditures dedicated to research and development. Other regions which were eligible for European Structural Fund money used the scheme to help define their region's policy priorities in the Operational Programmes and Single Programming Documents. The ad hoc selection of projects made room for a more systemic appraisal of each region's strengths and weaknesses in function of the region's position in a larger entity, the European Union.

The RTP/RIS/RITTS projects offered mechanisms and incentives to enable dialogue between regional players. Attempts to bring regional stakeholders together and work towards a shared view on the region had been previously attempted by some regions, but had failed mostly because of their inability to overcome institutional, political, cultural, and even geographical barriers. This scheme offered the possibility to 'use' the European Commission as the organisation placed above all regional parties to demand they work together on this European co-funded project. Deliverables had to be presented to this organisation in order to obtain funds. As a result, unlikely coalitions become feasible and even desirable. Policy options, non-existent or not previously spoken aloud, were put on the table and lively discussions followed.

The RTP/RIS/RITTS projects helped develop a broader concept of innovation which was different from technology transfer and placed it higher on the political agenda. Both programmes contributed significantly to establishing a strategic planning culture and helped

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[36] One has to bear in mind that 'innovation' as a policy objective in its own right was new to many regions in the period under investigation in this study.

widen the scope of RTD policies. Other areas linked to RTD and innovation were discussed and incorporated in the innovation strategy process, such as human resource development, finance for innovation projects, collaboration between companies and sectoral cluster development, supply chain management, the use of clean technologies, and sustainable development.

Both the RTP/RIS and RITTS programmes helped many regions to shed light on the performance of their innovation support infrastructure and develop actions to rationalise, better define, and/or augment the visibility of this infrastructure. With the help of a team of regional, national and even international experts, each RTP/RIS/RITTS region had to perform a 'needs analysis'. Regional firms were interviewed, surveyed, visited, and invited to meetings and workshops, in order to assess their innovation needs. For many regions, this was a novel approach to interact with regional firms not ventured before in such a systematic way. For many regional policy-makers, this confrontation was an eye-opener which helped them redefine innovation support measures.

The programme evaluations initiated by the European Commission pointed to a number of conditions that were helpful in realising a 'context-specific' regional innovation policy (Charles et al., 2000; Boekholt et al., 1998). In general, "experiences with RITTS show that the commitment to the project's success is not necessarily stronger in case[s] [where] the project promoter is a regional authority" (Charles et al., 2000). The six RITTS projects investigated in this study broadly support this. It is far from self-evident that regions endowed with constitutional and institutional means for self-government are better 'responsive problem-solvers' and/or better 'relations-handlers' simply because they are given the mandates and competencies to do so.

Important conditions are the scope of manoeuvre of the organisation in charge and its motives for participation, the organisation's standing in the region as well as the individual qualities of the person(s) representing that organisation (Charles et al., 2000). Regional leadership matters, as does political backing for the project. Good project management matters, as does purposive liaising with policy actors at different policy levels, including the European Commission. Solid evidence on the status quo matters, not only as a basis for informed decision-making but more often as a tool of 'factfulness' to fight and disarm unsubstantiated viewpoints held dearly or considered 'untouchable' (Rosling, 2018). These factors facilitating 'contextualisation' were observed across all six RITTS projects investigated in this study.

8.4 About the Public Administration framework of analysis

What is the added value of the Public Administration framework of analysis used in this study, and what are its limitations in better understanding contextualised policy-making? The origins of the study's two-dimensional Public Administration matrix of regional government function/governance quality combinations go back to a commissioned research project undertaken by Toonen et al. (1998) on the 'governmental governance capacity' ('bestuurskracht') of local government in the Netherlands. Itself inspired by Ostrom's work on 'the three worlds of action' that impact government decision-making processes (Kiser & Ostrom, 2000) and Hood's (1991) work positioning governance quality as a multi-dimensional concept driven by different types of administrative values, the matrix has since been applied to a multitude of Dutch local government research contexts (Abma, 2012).

At least three causes can be attributed to the successful uptake of this academic concept in policy practice. Firstly, the framework offers an 'organising principle', enabling it to be used as an analytical tool that helps organise the chaos of daily policy practice. The matrix can also be used in a comparative setting with multiple cases to provide "understanding and insight into commonalities within the differences among [regions]" as well as "understanding [of] the differences within the commonalities" (Toonen, 2008). Put differently, the matrix's heuristic qualities help users detect patterns between at first seemingly unconnected variables.

Secondly, the framework opens up the catchall term 'good governance' from a Public Administration perspective, thereby capturing the complexity of government decision-making. It understands governance as a 'multi-layered' phenomenon that requires multiple levels of analysis. Each level represents a different angle on governance driven by different sets of values. Values can be complementary but also in conflict with one another in any given situation. The quality of government can be assessed as 'good' at one level of analysis, but 'adequate' or even 'bad' at another. The matrix understands governance also as a 'multi-scale' phenomenon. As such, it helps practitioners understand how sharing similar values can initiate new partnerships between similar government actors but based in different regions or countries, and even based in different parts of the world.[37]

Thirdly, the added value of the framework resides in the possibility to be transformed into a governance quality 'scoreboard' at service of regional governments themselves, offering a snapshot of quality at a particular moment in time. The matrix can be used by regional governments as a starting point to address identified weaknesses or to implement changes in anticipation of future challenges. The different government function/governance level combinations of the two-dimensional matrix can be translated – organisationally – into a management action plan of objectives to be achieved, tasks to undertake for the achievements of those objectives, and skillsets required from staff to deliver these tasks.

Because the matrix gets meaning through empirical research, the limitations of the matrix are that it can only *indicate* patterns. In other words, it reflects what is observed in the real world. In order to *understand* the patterns between variables and the direction of the relationship between those variables, additional theory-driven research is needed to help explain what one is seeing. To illustrate this: none of the German regions in the study operated at the contextual level in any of the four functions of regional government, and none of the German regions enacted the function of 'change agent'. The British regions enacted the function of 'public service provider' and 'self-standing unit as part of a larger, multi-level system' at the operational and constitutional levels of governance, but none of the British regions engaged in these functions at the procedural and constitutional level. What do these findings mean? Are these random findings or the manifestation of a pattern? Are certain regional government roles, defined as combinations of certain government functions at certain governance levels, not compatible in a given regional or national context? If so, why is that, and does it matter?

Using a matrix with cells that are a combination of positions on the X- and Y-axis also raises the question of whether changes in either of the two dimensions are possible over time?

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[37] By way of example, following the United States' 2017 decision to withdraw from the 2015 Paris Agreement on Climate Change Mitigation under president Trump, the governors of California, New York, and Washington founded the United States Climate Alliance pledging to uphold the Paris Agreement within their borders at state level, despite the withdrawal at federal level. Since its foundation, fourteen more states have joined in this bipartisan coalition of governors representing 40% of the U.S. population.
Source: https://en.wikipedia.org/wiki/United_Stateswithdrawal_from_the_Paris_Agreement and https://www.usclimatealliance.org/ , both accessed on 21/09/2018.

Can regions 'switch over' to new functions more suited to dealing with changed circumstances? Can regions 'grow' over time and progress into different roles (matrix cells), starting at the operational and procedural level, and moving towards the constitutional and contextual level, for example? If so, what conditions need to be met for regional government to be able to do this, to engage in 'multi-level' change? And, vice versa, what is the impact of 'multi-level' change, and increasingly 'multi-scale' change, on governmental performance – i.e. on the government's track record of 'fixing things', dealing with change, and shaping the future?

8.5 About the future role of regional government

Answers to the questions above carry real-life implications for EU policies, in particular for the success of the EU's 'smart specialisation' agenda. One question that comes to mind is what are the implications of the EU's 'smart specialisation' agenda on the future role of regional governments across Europe? The relevance of the RITTS and RTP/RIS pilot programmes is still up-to-date and is reflected in the fact that the key constituent elements of the 'smart specialisation strategy' (abbreviated as 'S3' in EU Cohesion Policy jargon) have remained the same.

In order to unlock EU funds for research and innovation, regional governments are expected to design a policy that sets out to deliver *innovation-driven* economic transformation, making the best possible use of the region's knowledge assets (whether embodied in its enterprises, sectors, clusters, universities, research institutes, technical laboratories, and/or all of these organisations' staff).

With the emphasis on *endogenous* development, the policy is expected to set in motion "a process of [recombining] existing capabilities which are exploited and reconfigured into new activities" (Georghiou et al., 2014:431). While 'path dependency' is acknowledged as having an impact on future regional development, the policy's purpose is "'path broadening' as a way to avoid lock-in" (Landabaso, 2014:381).

The policy has to be developed collectively by the region's major innovation *stakeholders*. A bottom-up, "associative approach to regional development" (Cooke & Morgan, 1998) is generally considered superior to a top-down, government-only intervention style in several respects. A collective process of strategy development is better positioned to increase the level of commitment of participating parties with a greater likelihood of policy success. A collective planning process helps generate better decisions because policy options are more *informed choices* based on factual evidence. It facilitates a collective learning process, inviting actors to discuss and deliberate on the rationale of their preferred policy option. It can also be instrumental in arriving at a shared definition of a sound *monitoring and evaluation* system able to track progress and achievements of the policy choices made.

One could conclude that the European policy experimentation in the mid-1990s has now become an indispensable part of EU regional policy reforms. As McCann & Ortega-Argilés (2014:411) put it: "smart specialisation is helping to shift the culture of regional policy away from resource absorption and expenditure accountability and towards a form of policy accountability which is anchored on the development of policies driven by objectives, goals and strategies." Although the constituent elements of the EU's smart specialisation strategy have remained similar to those of the pilot programmes of the 1990s, the role that regional government is expected to take on is far more ambitious. This is an important change and is likely to impact the type of regional innovation governance required.

In the RITTS and RTP/RIS pilot programmes, the purpose of regional government intervention was very much to remedy obstacles to innovation and optimise the functioning of the regional innovation system. Intervention remained within the boundaries of the status quo. The new type of intervention under RIS3, however, asks regional government to step out of its comfort zone, leave behind the status quo and construct new pathways into the future. Regional government is expected to set in motion "a process of [recombining] existing capabilities which are exploited and reconfigured into new activities" (Georghiou et al., 2014:431). The policy's purpose is to discover and explore "new domains, both in terms of technological and market opportunities" in order to set in motion "a process of structural transformation" (Landabaso, 2014:387). A smart specialisation strategy asks regional government to make deliberate choices about the future; it is a non-neutral policy. It means that regional government has to accept risks and take responsibility for its choices, as well as for any potential failures. Regional government is expected to become a 'mediator in structural possibilities'. The new type of regional innovation policy will be 'haute couture' instead of 'ready-to-wear' to use Foray's terminology (2016).[38]

The debate among smart specialisation advocates is very much about the nature of this new type of regional innovation policy. Is it a return to picking winners, and a favouring of some sectors over others, or is it a government intervention at the regional level which supports the 'entrepreneurial discovery process' in a given spatial context? What has received far less attention in this debate so far is what this new role means for regional government. What is a 'mediator in structural possibilities' expected to do? Is regional government expected to act as an 'agent of change' at the contextual governance level, a 'regional futurist' in terms of the Public Administration framework, or does this new role imply a completely new regional government function that still needs to be defined and developed? Neither are the assumptions guiding government behaviour discussed in this debate. Do the rational actor model assumptions continue to guide the assumptions about regional government as a policy actor despite its obvious shortcomings?

8.6 About the orientations for future research

Several scholars have argued that the success of these smart specialisation strategies is "even more dependent on the quality of the local institutional framework" than previous intervention types, putting regional decision-makers "at the very heart of the strategy design and implementation process" (Rodriguez-Pose et al., 2014). The status quo-based Regional Innovation Systems concept is not very well suited to answer the 'what', the *quo vadis* question posed by the smart specialisation agenda. The concept requires at least an upgrade, if not an overhaul. The concept's underlying assumptions about regional government as a policy actor and decision-maker also make it ill-suited to answer the other question, 'how' to go about smart specialisation in order to make it a success? Academic research can be of help in both cases. By means of concluding this chapter, three elements of a possible future

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[38] Foray illustrates the difference between 'haute couture' versus 'ready-to-wear' policy as he calls it with the following example (2016:1431): "Supporting biotechnology development for fisheries will require the provision of capabilities in terms of research, suppliers and services which are very different from those required to support the development of advanced manufacturing technologies for the footwear industry or to support the development of ICT for tourism. Such a policy has to deal with the complexity and specificity of each activity and this has a cost."

research agenda are outlined, in addition to the research questions already suggested earlier in this chapter.

8.6.1 From conceptualising the 'what' to a 'theory of how'

As far as the 'what' question is concerned, recent research has started to look into ways to make the Regional Innovation Systems concept more applicable to a regional change agenda, particularly for those regions most in need of economic renewal (Martin & Trippl 2014; Trippl et al., 2016; Davide Parrilli et al., 2016). The typology of regional innovation system deficiencies developed by Tödtling & Trippl (2005) is complemented by conceptual approaches that examine the knowledge base of a region (Asheim & Coenen, 2005). Whereas the systems failure approach looks at a region's organisational and institutional settings, "the differentiated knowledge base approach stresses that regional industries can differ strongly in their underlying knowledge bases and, as a consequence, in their policy needs" (Martin & Trippl, 2014). Although both conceptual approaches should not be construed as clear-cut operational policy instructions, both concepts have, if used together, "particularly strong potential for informing customized regional innovation policies" (Martin & Trippl, 2014). Academic research is needed to better understand what type of future knowledge-driven development paths exist, what these might look like, and how their compatibility with the region's existing knowledge base can be assessed. More of this type of research is needed for the sake of knowledge advancement in this area, as well as to help policy-makers understand what 'what' means in a particular context.

The 'what' question, however, can no longer be answered in ignorance of the 'how'. Knowing *what* to do does not automatically translate into knowing *how* to do it, and yet, so far, little research seems to have been undertaken to study the *how* (McChesney et al., 2015). Academic research is needed "to provide better guidance about what needs to be done, how it needs to be done, and when it needs to be done" (Grindle, 2004:530). Studying contextualised policy-making once in one region will give a snapshot; it will not, however, help to develop a 'theory of how' (McChesney et al., 2015). That requires a different scale of research, one that allows for a deep study of many regions representing different contexts over a substantial period of time, in order to detect correlations between factors (patterns of what works and what does not work) and, if possible, causalities (independent variables explaining why this is the case). No such large-scale, empirical research exists to date.

The second point about the 'how' relates to understanding what the real challenges of designing and delivering successful economic transformation strategies are, as envisaged in the smart specialisation agenda. The real challenge in moving an economy forward is that most of the strategies required are 'behavioural change' strategies as opposed to 'stroke-of-the-pen' strategies to use McChesney et al.'s language. 'Stroke-of-the-pen strategies' are executed just by ordering or authorising them to be done (McChesney et al., 2015). With authority and resources present, they tend to happen. Changes of a constitutional nature (e.g. decreeing a law to devolve power to new government actors or different government layers), of an institutional nature (e.g. creating new organisations with new mandates in a given system), or of an operational nature (e.g. implementing a new, more performance-based evaluation and monitoring system of innovation support) all fall into this category. Important as they can be in a given context, the real impact comes from strategies that help a system deliver outputs and outcomes at a higher quality for similar or reduced costs. The real impact

comes from strategies that help a system achieve results and impacts that are system-sustainable, that benefit a larger constituency, and that last for longer periods of time.

This type of change, however, cannot be *ordered* to happen. It requires a 'behavioural change' strategy which is itself based on more realistic assumptions of human behaviour. Despite the advances in conceptualisation described above, the 'knowledge base' approach and the 'systems failure' approach both continue to view regional government as a rational actor. Equipped with the correct problem definition, the innovation policy solution is assumed to follow automatically. If the case studies have demonstrated one thing it is that decision-making processes are 'messy' and policies are negotiated solutions that result from interaction, not data. Public Administration is very well suited as a discipline to branch out from the field of behavioural economics with an original and government-specific contribution on the characteristics of such 'behavioural change' policy strategies, acknowledging the restricted rationality of both the government actor and the actors targeted with such strategies.

8.6.2 From 'good governance' to 'good enough' governance

If 'governance' is considered key to smart specialisation success, then inspiration for new research can be found in development research. Organisations such as the World Bank and the IMF have been advocating 'good governance' "as a necessary ingredient for reducing widespread poverty" and, depending on the country in question, "as a condition for debt relief" (Grindle, 2004:526). For quite some time now, the development research community has been studying the concept of governance and analysing what distinguishes good from bad governance. It has resulted in a good governance agenda which has served as a source of inspiration beyond the development policy agenda, in other contextual settings and other research areas. Unfortunately, it has also become "unrealistically long and growing longer over time" according to Grindle (2004:525). As a guide to development, "good governance is deeply problematic" because "it calls for improvements that touch virtually all aspects of the public sector" (Grindle, 2004:525). Achieving this is already difficult for affluent countries, let alone for the poorest countries in the world requesting debt relief. Ironically, if countries with wide-ranging underperformance issues were able to implement a good governance agenda, then they would probably not be in the position they are in. The criticism on the 'good governance' agenda as a condition for obtaining economic development aid has sparked a new research interest around the 'what if' question. If 'good' governance is too unrealistic, too absolute to attain, what if the focus moves instead to 'good enough' governance?

Grindle is among the researchers who advocate 'good enough governance' as a more feasible alternative.[39] Whereas the 'good governance agenda' is very adamant on *what* needs to be done to combat poverty and encourage development, it provides little guidance on the *how*. More specifically, "there is little guidance about what's essential and what's not, what should come first and what should follow, what can be achieved in the short term and what can only be achieved over the longer term, what is feasible and what is not" (Grindle, 2004:526). A similar point can be made about the 'smart specialisation agenda'. A smart specialisation strategy is conditional on obtaining European financial support in the area of regional innovation policy. As EU regional funds are earmarked for Europe's less favoured

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[39] Grindle (2004 :526) defines 'good enough governance' as "a condition of minimally acceptable government performance and civil society engagement that does not significantly hinder economic and political development and that permits poverty reduction initiatives to go forward".

regions, some have, however, wondered whether "these governments are capable of identifying in which sectors structural changes [are] most desirable" (Landabaso, 2014:387). Are they "in a position to [integrate] 'divided and dispersed' knowledge from different regional stakeholders and [are they] willing to manage the risks of entrepreneurial discovery?" (Landabaso, 2014:387). Are they "capable of shifting their traditional [top-down] planning culture in this radically new [bottom-up] direction?" (Landabaso, 2014:387).

To help good governance research advance within the smart specialisation agenda, one should not only focus on identifying what 'good governance' means in this context. For research to be helpful for better understanding *how* smart specialisation strategies can contribute to regional economic transformation processes within different settings and conditions, one should also ask when is 'good' governance 'good enough'? And vice versa, when is 'bad' governance 'too bad' for smart specialisation to happen? According to Aristotle, answering these questions does not require a contextualised approach. Philosophising about the meaning of 'virtue', Aristotle introduced the idea of 'enough' through his concept of the 'golden mean' (Nussbaum, 1993). Virtue, he said, is not the polar opposite of evil; it lies in the middle ground between too much and too little (Handy, 2006:28). To define 'good' is to find the golden mean, the desirable middle between two extremes, one of excess and the other of deficiency. Maybe the 'good governance' needed for smart specialisation has to be re-conceptualised in terms of 'good enough' governance. But in order to succeed at this, one more element has to be included in the research agenda.

8.6.3 From focussing on the present to 'thinking in time'

Aristotle had a non-relative, universally applicable meaning in mind with his concept of 'virtue' (Nussbaum, 1993). The extent of deviation from the 'golden mean' towards either extreme is, however, not necessarily at odds with the assessment of that deviation in a contextual framework. Key performance indicators can present similar data for two different countries or regions, yet the conclusions – in terms of assessing their performance – can be very different if one adds 'the story behind' these figures. Whereas the first part can be predominantly quantitative in nature, the latter interpretative part is by definition qualitative in nature. This brings me to the third element of future research, the need for 'thinking' more 'in time'.

Policy strategies dedicated to good governance and smart specialisation do not take place in a vacuum. Instead of starting with a *tabula rasa*, they built upon what is already there. Ironically, scholars frequently refer to a region's 'path dependency', yet a historical dimension explaining how regions came to be in the position they are in is surprisingly absent from their research. To understand the context of a region, it is important to study the region's historical development over time. What role did the region play in the overall history of the country, the continent, the world? Which sectors dominated the regional economy? How were change and economic transformation achieved in the past? What actors played a role in these processes and was government one of them? What obstacles to change were encountered and how were they overcome?

'Thinking in time', a term phrased by Neustadt & May (1986), acknowledges the long arm of history. Findings from developmental empirical research strike a chord with smart specialisation research and offer food for thought. A historical perspective reveals that in many countries institutional innovations have been introduced "in the wake of reform, rather than serving as preconditions to it" (Rodrik, 2003). Equally, economic growth and

development jumps have been "often unleashed by relatively few policy changes" (Rodrik, 2003). Historical research can help to distinguish between those institutional innovations that are necessary to spark change in that particular context and those that are 'nice to have but not essential' at that particular moment in time. Historical research in a cross-country comparative mode can investigate what the central policy change was that ignited growth in different countries. Historical research can also help put 'the time dimension of change' into perspective and "promote greater tolerance for less-than-ideal characteristics even in the midst of improvements over time" (Grindle, 2004:533). History is full of examples where 'good enough' governance managed to launch a trajectory of profound change. What matters is understanding the particular context to recognise what the "few policy changes" (Rodrik, 2003) are that are needed to overcome 'path dependency'.

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References

Aaltio, I. & Heilmann, P. (2010). Case Study as a Methodological Approach. In Mills, A., Durepos, G. & Wiebe, E. (eds), *Encyclopaedia of Case Study Research* (pp.66-77). Thousand Oaks: Sage Reference Publications.

Abma, K. (2012). Beoordelen van gemeenten. Doctoral dissertation. Open University. Nijmegen: Wolf Legal Publishers.

Acemoglu, D. & Robinson, J. (2013). *Why Nations Fail: The Origins of Power, Prosperity, and Poverty.* London: Profile Books Ltd.

Allison, G. (1971). *Essence of Decision: Explaining the Cuban Missile Crisis.* Boston: Little, Brown.

Allison, G. & Zelikow, P. (1999). *Essence of Decision: Explaining the Cuban Missile Crisis.* Second edition. New York: Longman.

Amin, A. & Thrift, N. (1995). Institutional issues for the European regions: from markets and plans to socioeconomics and powers of association. *Economy and Society*, 24(1), pp.41-61.

Archibugi, D. & Michie, J. (1997). *Innovation policy in a global economy*. Cambridge: Cambridge University Press.

Asheim, B. & Coenen, L. (2005). Knowledge Bases and Regional Innovation Systems: Comparing Nordic Clusters. *Research Policy*, 34(8), pp.1173-1190.

Asheim, B. & Gertler, M. (2005). The geography of innovation: regional innovation systems. In Fagerberg, J., Mowery, D. & Nelson, R. (eds), *The Oxford Handbook of Innovation* (pp.291-317). Oxford: Oxford University Press.

Asheim, B. & Isaksen, A. (1997). Location, agglomeration and innovation: toward regional innovation systems in Norway? *European Planning Studies*, 5(3), pp.299-330.

Asheim, B. & Isaksen, A. (2003). SMEs and the regional dimension of innovation. In Asheim, B., Isaksen, A., Nauwelaers, C. & Tödtling, F. (eds), *Regional Innovation Policy For Small-Medium Enterprises* (pp.21-46). Cheltenham: Edward Elgar.

Asheim, B., Lawton Smith, H. & Oughton, C. (2011). Regional Innovation Systems: Theory, Empirics and Policy. *Regional Studies*, 45(7), pp.875-891.

Autio, E. (1998). Evaluation of RTD in regional systems of innovation. *European Planning Studies*, 6(2), pp.131-140.

Berg, B. (2004). *Qualitative Research Methods for the Social Sciences.* Fifth edition. Boston: Pearson, Longman, Allyn & Bacon.

Bobe, M. & Shurmer-Smith, L. (2007). Cross channel Atlas - Channel Space.

Boekholt, P., Arnold, E. & Tsipouri, L. (1998). *The Evaluation of the Pre-pilot Actions under Article 10: Innovative Measures regarding Regional Technology Plans*. Brussels: European Commission, DG REGIO.

Boschma, R. & Lambooy, J. (1999). Evolutionary economics and economic geography. *Journal of Evolutionary Economics*, 9(4), pp.411-429.

Bovens, M., 't Hart, P. & Peters, B.G. (eds) (2001). *Success and Failure in Public Governance: A Comparative Analysis.* Cheltenham: Edward Elgar.

Braczyk, H., Cooke, P. & Heidenreich, M. (eds) (1998). *Regional Innovation Systems: The Role of Governances in a Globalized World*. London: UCL Press.

Bullmann, U. (1996). The politics of the third level: Introductory perspectives. *Regional and Federal Studies*, 6(2), pp.3-19.

Cannell, W. & Dankbaar, B. (eds) (1996). *Technology Management and Public Policy in the European Union*. Luxembourg: Publications Office of the European Communities, Oxford: Oxford University Press.

Carlsson, B. (ed.) (1995). *Technological Systems and Economic Performance: The Case of Factory Automation*. Dordrecht/Norwell: Kluwer Academic Publishers.

Carlsson, B. & Stankiewicz, R. (1995). On the nature, function and composition of technological systems. In Carlsson, B. (ed.), *Technological Systems and Economic Performance: The Case of Factory Automation* (pp.21-56). Dordrecht/Norwell: Kluwer Academic Publishers.

Charles, D., Nauwelaers, C., Mouton, B. & Bradley, D. (2000). *Assessment of the Regional Innovation and Technology Transfer Strategies and Infrastructures (RITTS) Scheme: Final Evaluation Report.* Luxembourg: Publications Office of the European Union.

Coenen, L. (2007). The role of universities in the regional innovation systems of the North East of England and Scania, Sweden: providing missing links? *Environment and Planning C: Government and Policy*, 25(6), pp.803-821.

Cohen, W. & Levinthal, D. (1990). Absorptive capacity: A new perspective on learning and innovation. *Administrative Science Quarterly*, 35(1), pp.128-152.

Cooke, P. (1992). Regional Innovation Systems: Competitive Regulation in the New Europe. *Geoforum*, 23(3), pp.365-382.

Cooke, P. (1998). Introduction: origin of the concept. In Braczyk, H., Cooke, P. & Heidenreich, M. (eds) (1998). *Regional Innovation Systems. The Role of Governances in a Globalized World* (pp.2-25). London: UCL Press.

Cooke, P. (2001). Regional Innovation Systems, Clusters, and the Knowledge Economy. *Industrial and Corporate Change*, 10(4), pp.945-974.

Cooke, P. & Morgan, K. (1995). The Creative Milieu: A Regional Perspective on Innovation. In Dodgson, M. & Rothwell, R. (eds), *The Handbook of Industrial Innovation* (pp.25-32). Cheltenham: Edward Elgar.

Cooke, P. & Morgan, K. (1998). *The Associational Economy: Firms, Regions and Innovation*. Oxford: Oxford University Press.

Cooke, P. & Schienstock, G. (2000). Structural Competitiveness and Learning Regions. *Journal of Enterprise and Innovation Management Studies*, 1(3), pp.265-280.

Cooke, P., Asheim, B., Boschma, R., Martin, R., Schwartz, D. & Tödtling, F. (eds) (2011). *Handbook of Regional Innovation and Growth*. Cheltenham: Edward Elgar.

Corvers, F. (1994). Economic Integration the European Way: Stronger Firms, Stronger Regions. *MERIT Research Memorandum* 2/94-040. Maastricht: Maastricht Economic Research Institute on Innovation and Technology.

Corvers, F. (1995). Regional Policy within the European Union: Regional Implications of a Changing Paradigm. *ESRC Seminar on Regional and Local Responses to European Integration*, University of Warwick, Coventry, United Kingdom. 12 October.

Corvers, F. (1996). Regional Innovation as a Challenge for Policy-Makers. *36th European Congress of the Regional Science Association*, Zürich, Switzerland. 26-30 August.

Corvers, F. (1997a). How to evaluate the region's innovation potential? An overview of analytical tools. *Dutch Regional Science Association* Conference on 'Innovatie in bedrijf en regio: strategie en praktijk', Utrecht, the Netherlands. 11 April.

Corvers, F. (1997b). The Green Paper on Innovation and its Action Plan: Shaping Europe's Future Innovation Policy. *EIPA Seminar* on 'Innovation Policy and Strategy for the Regions of Europe', European Institute for Public Administration, Barcelona, Spain. 10-13 November.

Corvers, F. (1998). Regional Development and Innovation Policy from a European Perspective. Guest lecture given at the *Geography Department of the London School of Economics and Political Science* (LSE), London, United Kingdom. 27 February.

Corvers, F. (1999). Regionale Innovationsstrategien aus Sicht der Europäischen Kommission. *RAUM Österreichische Zeitschrift für Raumplanung und Regionalpolitik*, 35, pp.35-37.

Corvers, F. (2000). Regional Innovation Policy at Community level: Evidence from the RITTS Programme to promote Regional Innovation Systems. *Fourth International Conference on Technology Policy and Innovation* on 'Learning and Knowledge Networks for Development', Curitiba, Brazil, 28-31 August.

Corvers, F. (2005). Regional Innovation Policy at the Community Level: Evidence from the RITTS Programme to Promote Regional Innovation Systems. In Gibson, D., Heitor, M. & Ibarra-Yunez, A. (eds) (2005). *Learning and Knowledge for the Network Society* (pp.201-226). West Lafayette: Purdue University Press.

Corvers, F. & Nijkamp, P. (1996). Regional Development and Inter-Organisational Policy-Making in a Pan-European Context. *Fifth World Congress of the Regional Science Association International* on 'Regional Science in the Process of Borderless Globalization of the World Economy: Preparing for the 21st Century', Tokyo, Japan. 2-6 May.

Corvers, F. & Nijkamp, P. (2000). Regional Development and Interorganizational Policy Making in a Pan-European Context. In Kohno, H., Nijkamp, P. & Poot, J. (eds), *Regional Cohesion and Competition in the Age of Globalization* (pp.265-285). Cheltenham: Edward Elgar.

Corvers, F. & Nijkamp, P. (2003). Regional Development and EU Research Policy. *VU Research Memorandum* 2003-5. Amsterdam: Faculty of Economics and Business Administration, Free University Amsterdam.

Corvers, F. & Nijkamp, P. (2004). Regional Development and EU Research Policy. *International Journal of Technology, Policy and Management*, 4(3), pp.193-209.

Crow Report (1997). Regional Planning Guidance for the South East (RPG9); Regional Planning Guidance for the South West (RPG10). Cardiff University, UK.

Davide Parrilli, M., Dahl Fitjar, R. & Rodríguez-Pose, A. (eds) (2016). *Innovation Drivers and Regional Innovation Strategies.* London: Routledge.

Denzin, N. (1978). *The Research Act: A Theoretical Introduction to Sociological Methods*. Second edition. New York: McGraw-Hill.

DG REGIO (1999). Brochure on North East of England.

Diez, M. & Esteban, M. (2000). The evaluation of regional innovation and cluster policies: looking for new approaches. *Fourth EES Conference*, Lausanne, Switzerland, 12-14 October.

Doloreux, D. (2003). Regional innovation systems in the periphery: The case of the Beauce in Québec (Canada). *International Journal of Innovation Management*, 7(1), pp.67-94.

Doloreux, D. & Parto, S. (2004). Regional Innovation Systems: A Critical Synthesis. *UNU-INTECH Discussion Paper*, #2004-17. Maastricht: UNU-INTECH.

Doloreux, D. & Parto, S. (2005). Regional innovation systems: Current discourse and unresolved issues. *Technology in Society*, 27, pp.133–153.

Dror, Y. (2001). *The Capacity to Govern*. London: Frank Cass.

Dror, Y. (2004). Strategic Brain for Central Government. In Potůček, M. (ed.), *The Capacity to Govern in Central and Eastern Europe* (pp.15-27). Bratislava: NISPAcee.

EC, Commission of the European Communities (1993). *White Paper on Growth, Competitiveness, Employment: The Challenges and Ways Forward into the 21st Century*. COM(93)700/final. Luxembourg: Publications Office of the European Communities.

EC, Commission of the European Communities (1994). *Competitiveness and cohesion: trends in the regions: Fifth periodic report on the social and economic situation and development of the regions in the Community*. COM(94)322/final. Luxembourg: Publications Office of the European Communities.

EC, Commission of the European Communities (1995). *Green Paper on Innovation*. COM(95)688/final. Luxembourg: Publications Office of the European Communities.

EC, European Commission (2001). *The lessons from RTPS/RITTS/RIS*. Typescript. Brussels: European Commission.

Edquist, C. (ed.) (1997). *Systems of Innovation: Technologies, Institutions and Organizations.* London: Pinter.

ETEPS Consortium (2011). *Analysis of the Evolution of the Costs of Research: Trends, Drivers and Impacts. Final Report*. Study commissioned by the European Commission, DG RTD. Contract n° RTD/B2/2009/COST-2009-01.

EUROSTAT (1993). Portrait of the Regions.

Fabre, E. (2009). *Belgian Federalism in a Comparative Perspective*. Vives discussion paper, 5.

Fagerberg, J., Mowery, D. & Nelson, R. (eds) (2005). *The Oxford Handbook of Innovation*. Oxford, UK: Oxford University Press

Feldman, M. & Martin, R. (2004). *Jurisdictional Advantage.* NBER Working Paper N° 10802.

Florida, R. (2002). *The Rise of the Creative Class: And How It's Transforming Work, Leisure, Community and Everyday Life*. New York: Basic Books.

Fraser, A. (2001). Marie Antoinette: The Journey. London: Weidenfeld & Nicolson.

Foray, D. (2014). From smart specialisation to smart specialisation policy. *European Journal of Innovation Management*, 17(4), pp.492-507.

Foray, D. (2016). On the policy space of smart specialization strategies. *European Planning Studies*, 24(8), pp.1428–1437.

Foray, D., David, P.A. & Hall, B. (2009). Smart specialisation: the concept. *Knowledge Economists Policy Brief*, 9. Brussels: European Commission Knowledge for Growth Expert Group.

Freeman, C. (1987). *Technology Policy and Economic Performance: Lessons from Japan.* London: Pinter

Fromhold-Eisebith, M. (2007). Bridging Scales in Innovation Policies: How to Link Regional, National and International Innovation Systems. *European Planning Studies*, 15(2), pp.217-233.

Georghiou, L., Uyarra, E., Saliba Scerri, R., Castillo, N. & Cassingena Harper, J. (2014). Adapting smart specialisation to a micro-economy: the case of Malta. *European Journal of Innovation Management*, 17(4), pp.428-447.

Gertler, M. (2003). Tacit knowledge and the economic geography of context, or the undefinable tacitness of being (there). *Journal of Economic Geography*, 3(1), pp.75-99.

Gertler, M., Wolfe, D. & Garkut, D. (2000). No place like home? The embeddedness of innovation in a regional economy. *Review of International Political Economy*, 7(4), pp.688-718.

Goethe, J.W. von (1787). *Autobiographisches: Italien Reise*. Caserta, 16 March.

Goldsmith, M. (1996). Normative Theories of Local Government: A European Comparison. In King, D. & Stoker, G. (eds), *Rethinking Local Democracy (*pp.174-192). Basingstoke: Macmillan.

Grabher, G. (1993). The weakness of strong ties. The lock-in of regional development in the Ruhr area. In Grabher, G. (ed.), *The Embedded Firm: On the Socio-economics of Industrial Networks* (pp.255-277). London: Routledge.

Grindle, M. (2004). Good Enough Governance: Poverty Reduction and Reform in Developing Countries. *Governance: An International Journal of Policy, Administration, and Institutions*, 17(4), pp.525–548.

Handy, C. (2006). *Myself and Other More Important Matters*. London: William Heinemann.

Hardin, G. (1968). The Tragedy of the Commons. In *Science*, 162, pp.1243-1248.

Hassink, R. (1992). Regional Innovation Policy: Case-Studies from the Ruhr Area, Baden-Württemberg and the North East of England. Doctoral dissertation. Utrecht: Rijksuniversiteit Utrecht.

Hassink, R. (2000). Political Lock-Ins in Old Industrial Areas: A Comparative Study on Shipbuilding and Textile Regions in Germany and South Korea*.* Typescript.

Hassink, R. (2002). Regional Innovation Support Systems: Recent Trends in Germany and East Asia. *European Planning Studies*, 10(2), pp.153-164.

Hermann, C. (1963). Some Consequences of Crisis Which Limit the Viability of Organizations. *Administrative Science Quarterly*, 8(1), pp.61-82.

Herriott, R. & Firestone, W. (1983). Multisite qualitative policy research: Optimizing description and generalizability. *Educational Researcher*, 12, pp.14-19.

Herrschel, T. & Tallberg, P. (eds) (2011). *The Role of Regions? Networks, Scale, Territory.* Kristianstad: Region Skåne.

Hesse, J. & Sharpe, L. (1991). Local Government in International Perspective: Some Comparative Observations. In Hesse, J. & Sharpe, L. (eds), *Local Government and Urban Affairs in International Perspective: Analyses of Twenty Western Industrialised Countries* (pp.603–621). Baden-Baden: Nomos Verlagsgesellschaft.

Hills, G. & Lingard, R. (2004). *UHI: The Making of a University.* Edinburgh: Dunedin Academic Press.

Hilpert, U. et al. (1992). *Archipelago Europe: Islands of Innovation.* Synthesis Report, XII/411/92, FAST programme. Brussels: Commission of the European Communities.

Holbrook, A. & Salazar, M. (2003). Regional innovation systems within a federation: do national policies affect all regions equally? Conference *Knowledge and Economic and Social Change: New Challenges to Innovation Studies*, Manchester, 7-9 April.

Hood, C. (1991). Public Administration for all seasons, *Public Administration*, 69, pp.3-19.

Hoogerwerf, A. (1987). Beleid berust op veronderstellingen: de beleidstheorie. In Lehning, P., & Simonis, J. (eds), *Handboek Beleidswetenschap* (pp.23-40). Meppel/Amsterdam: Boom Uitgeverij.

Hooghe, L. & Marks, G. (2002). Types of Multi-Level Governance. *Les Cahiers européens de Sciences Po*, n°03. Paris: Sciences Po, Centre d'études européennes.

Hooghe, L., Marks, G., Schakel, A. (2010). *The Rise of Regional Authority. A comparative study of 42 democracies*. London: Routledge.

Howells, J. (2005). Innovation and regional economic development: a matter of perspective? *Research Policy*, 34, pp.1220-1234.

Howlett, M. & Ramesh, M. (2003). *Studying Public Policy, Policy Cycles and Policy Subsystems.* Second edition. Oxford: Oxford University Press.

Hoyle, B. (1997). The South Coast Region Economic Partnership: an introductory overview. *Department of Geography Discussion Paper*, 42. Southampton: University of Southampton.

Isaksen, A. (2001). Building Regional Innovation Systems: Is Endogenous Industrial Development Possible in the Global Economy? *Canadian Journal of Regional Science/Revue canadienne des sciences régionales*, 24(1), pp.101-120.

Isaksen, A. (2003). National and regional contexts for innovation. In Asheim, B., Isaksen, A., Nauwelaers, C. & Tödtling, F. (eds), *Regional Innovation Policy for Small-Medium Enterprises* (pp.49-77). Cheltenham: Edward Elgar.

John, P. (2002). *Analysing Public Policy*. Reprinted 1988 edition. London & New York: Continuum.

Keating, M. (1998). Is there a regional level of government in Europe? In Le Galès, P. & Lequesne, C. (eds), *Regions in Europe* (pp.11-29). London: Routledge.

Kickert, W. (2008). The Study of Public Management in Europe and the United States. A Comparative Analysis of National Distinctiveness. In: *dms – der moderne staat – Zeitschrift für Public Policy, Recht und Management*, Heft 1/2008, pp.221-234.

Kilper, K. & Latniak, E. (1996). Einflußfaktoren betrieblicher Innovationsprozess: Zur Rolle des regionalen Umfeldes. In Brödner, P., Pekruhl, U. & Rehfelf, D. (eds), *Arbeitsteilung ohne Ende? Von den Schwierigkeiten inner- und überbetrieblicher Zusammenarbeit* (pp.217-240). München: Rainer Hampp Verlag.

Kiser, L. & Ostrom, E. (2000). The Three Worlds of Action: A Metatheoretical Synthesis of Institutional Approaches. In McGinnis, M. (ed.), *Polycentric Games and Institutions: Readings from the Workshop in Political Theory and Policy Analysis* (pp.56-88). Michigan: University of Michigan Press.

Kline, S. & Rosenberg, N. (1986). An overview of innovation. In Landau, R. & Rosenberg, N. (eds), The Positive Sum Strategy: Harnessing Technology for Economic Growth (pp.275–305). Washington D.C.: National Academy Press.

Kluge, J., Stein, W. & Licht, J. (2001). *Knowledge Unplugged.* Basingstoke: Palgrave.

Koch, J.T. (2006). *Celtic Culture: A Historical Encyclopaedia*. Volume 1. Santa Barbara, CA: ABC-CLIO.

Korsten, A., & Toonen, T. (eds) (1993). *Bestuurskunde: hoofdfiguren en kernthema's*. Third edition. Leiden: Stenfert Kroese.

Korsten, A., Abma, K. & Schutgens, J. (2007). *Bestuurskracht van gemeenten: Meten, vergelijken en beoordelen*. Delft: Eburon.

Koschatzky, K. (2000). The Regionalisation of Innovation Policy in Germany: Theoretical Foundations and Recent Experience. *Fraunhofer-ISI Working Paper*, N°R1/2000. Karlsruhe: Fraunhofer-ISI.

Kuhlmann, S. & Edler, J. (2003). Scenarios of technology and innovation policies in Europe: Investigating future governance. *Technological Forecasting & Social Change*, 70, pp.619–637.

Kuhn, T. (1962). *The Structure of Scientific Revolutions.* Chicago, USA: University of Chicago Press.

Lagendijk, A. (2011). Regional innovation policy between theory and practice. In Cooke, P., Asheim, B., Boschma, R., Martin, R., Schwartz, D. & Tödtling, F. (eds) (2011). *Handbook of Regional Innovation and Growth* (pp.597-608). Cheltenham: Edward Elgar.

Landabaso, M. (1997). The Promotion of Innovation in Regional Policy: Proposals for a Regional Innovation Strategy. *Entrepreneurship and Regional Development*, 9, pp.1-24.

Landabaso, M. (2014). Guest editorial on research and innovation strategies for smart specialisation in Europe. *European Journal of Innovation Management*, 17(4), pp.378-389.

Landabaso, M., & Reid, A. (1999). Developing Regional Innovation Strategies: The European Commission as Animateur. In Morgan, K. & Nauwelaers, C. (eds), *Regional Innovation Strategies: The Challenge for Less-Favoured Regions* (pp.19-39). London: The Stationary Office.

Lasswell, H. (1956). *The Decision Process: Seven Categories of Functional Analysis*. College Park: University of Maryland Press.

Leadbeater, C. (2000). *Living on Thin Air.* London: Penguin Books.

Lijphart, A. (1999). *Patterns of Democracy. Government Forms and Performance in Thirty–Six Countries.* New Haven: Yale University Press.

Loughlin, J. (2001), with the collaboration of Aja, E., Bullman, U., Hendriks, F., Lidström, A., Seiler, D-L. *Subnational Democracy in the European Union: Challenges and Opportunities.* Oxford: Oxford University Press.

Lundvall, B-Å. (ed.) (1992). *National Systems of Innovation: Towards a Theory of Innovation and Interactive Learning.* London: Pinter.

Lundvall, B-Å. & Borrás, S. (1999). *The globalising learning economy: Implications for innovation policy.* European Commission report based on contributions from seven projects under the TSER programme. EUR 18307 EN. Luxembourg: Publications Office of the European Communities.

Magone, J. (2003). *The Politics of Southern Europe.* Westport: Praeger.

Marcussen, M. & Torfing, J. (eds) (2007). *Democratic Network Governance in Europe*. Basingstoke: Palgrave Macmillan.

Marks, G., Hooghe, L., Schakel, A. (2008). Measuring Regional Authority. *Regional and Federal Studies*, 18(2-3), pp.111-121.

Martin, R. & Trippl, M. (2014). System Failures, Knowledge Bases and Regional Innovation Policies*. The Planning Review*, 50:1, pp.24-32.

McCann, P. & Ortega-Argiles, R. (2013a). Some Practical Elements Associated with the Design of an Integrated and Territorial Place-Based Approach to EU Cohesion. In Crescenzi, R. & Percoco, M., *Geography, Institutions and Regional Economic Performance* (pp.95-118). Heidelberg: Springer.

McCann, P. & Ortega-Argiles, R. (2013b). Modern regional innovation policy. *Cambridge Journal of Regions, Economy and Society*, 6(2), pp.187-216.

McCann, P. & Ortega-Argiles, R. (2014). Smart specialisation in European regions: issues of strategy, institutions and implementation. *European Journal of Innovation Management*, 17(4), pp.409-427.

McCann, P. & Ortega-Argiles, R. (2015). Smart Specialization, Regional Growth and Applications to European Union Cohesion Policy. *Regional Studies*, 49(8), pp.1291-1302.

McChesney, C., Covey, S. & Huling, J. (2015). *The four disciplines of execution: Achieving your wildly important goals.* London: Simon & Schuster.

Metcalfe, S. (1995). The Economic Foundations of Technology Policy: Equilibrium and Evolutionary Perspectives. In Stoneman, P. (ed.), *Handbook of the Economics of Innovation and Technological Change* (pp.409-512). Oxford: Blackwell Publishers.

Morgan, K. & Nauwelaers, C. (eds) (1999). *Regional Innovation Strategies: The Challenge for Less-Favoured Regions*. London: The Stationary Office.

Muldur, U., Corvers, F., Delanghe, H., Dratwa, J., Heimberger, D., Sloan, B. & Vanslembrouck, S. (2006). *A New Deal for an Effective European Research Policy: The Design and Impacts of the 7th Framework Programme.* Dordrecht: Springer.

Murray, R. (1991). *Local Space: Europe and the New Regionalism*. Manchester: Centre for Local Economic Strategies.

Murray, R. (1992). Towards a Flexible State. In Murray, R. (ed.), *New Forms of Public Administration*. Institute of Development Studies Bulletin, 23(4).

Nauwelaers, C. & Reid, A. (1995). *Innovative Regions? A Comparative Review of Methods of Evaluating Regional Innovation Potential.* Louvain-la-Neuve: RIDER & Luxembourg: Publications Office of the European Communities.

Nauwelaers, C. & Wintjes, R. (2003). Towards a new paradigm for innovation policy? In Asheim, B., Isaksen, A., Nauwelaers, C. & Tödtling, F. (eds), *Regional Innovation Policy for Small-Medium Enterprises* (pp.193-220). Cheltenham: Edward Elgar.

NDC (1994). Untitled brochure.

Nelson, R. (ed.) (1993). *National Innovation Systems: A Comparative Analysis.* Oxford: Oxford University Press

Nelson, R. & Rosenberg, N. (1993). Technical Innovation and National Systems. In Nelson, R. (ed.), *National Innovation Systems: A Comparative Analysis* (pp.3-21). Oxford: Oxford University Press.

Neustadt, R., & May, E. (1986). *Thinking in Time: The Uses of History for Decision-Makers.* New York: The Free Press.

Nussbaum, M. (1993). Non-Relative Virtues: An Aristotelian Approach. In Nussbaum, M. & Sen, A. (eds), *The Quality of Life* (pp.242-269). Oxford: Oxford University Press.

OECD (1994). *Frascati Manual: The Measurement of Scientific and Technical Activities: Standard Practice for Surveys of Research and Experimental Development*. Paris: OECD.

OECD (1997). *Oslo Manual: The Measurement of Scientific and Technological Activities. Proposed Guidelines for Collecting and Interpreting Technological Innovation Data.* Paris: OECD.

OECD (1999). *Managing National Innovation Systems*. Paris: OECD.

OECD (2005). *Modernising Government: The Way Forward*. Paris: OECD.

OECD (2009). *OECD Reviews of Regional Innovation: Piedmont, Italy 2009.* Paris: OECD.

Ostrom, E. (1990). *Governing the Commons: The Evolution of Institutions for Collective Action.* Cambridge: Cambridge University Press.

Page, E. (1991). *Localism and Centralism in Europe.* Oxford: Oxford University Press.

Page, E. & Goldsmith, M. (eds) (1987). *Central-local government relations: a comparative analysis of West European unitary states*. London: Sage.

Painter, M. & Pierre, J. (2005). Unpacking Policy Capacity: Issues and Themes. In Painter, M. & Pierre, J. (eds), *Challenges to State Policy Capacity: Global Trends and Comparative Perspectives* (pp.1-18). Basingstoke: Palgrave Macmillan.

Patton, M. (1987). *How to use qualitative methods in evaluation.* Newbury Park, CA: Sage.

Pavitt, K. (1999). *Technology, Management and Systems of Innovation.* Cheltenham: Edward Elgar.

Peters, B.G. & Pierre, J. (2016). *Comparative Governance: Rediscovering the Functional Dimension of Governing*. Cambridge: Cambridge University Press.

Porter, M. (1990). *The Competitive Advantage of Nations.* London: MacMillan.

Pressman J., & Wildavsky, A. (1973). *Implementation: How Great Expectations in Washington are Dashed in Oakland; or, Why it's Amazing that Federal Programs Work at All.* Berkeley: University of California Press.

Ribot, J. (2002). *Democratic Decentralization of Natural Resources: Institutionalizing Popular Participation.* Washington, D.C.: World Resources Institute.

Richardson, J. (ed.) (1982). *Policy Styles in Western Europe*. London: Routledge.

Richardson, J. (ed.) (2013). *Policy Styles in Western Europe*. Second edition. London: Routledge.

Riccucci, N. (2010). *Public Administration: Traditions of Inquiry and Philosophies of Knowledge.* Washington D.C.: Georgetown University Press.

RIS (1996). Untitled document.

RIS3 factsheet (March 2014). *National/Regional Innovation Strategies for Smart Specialisation (RIS3).* KN-02-14-428-EN-C. Luxembourg: Publications Office of the European Union.

Rodríguez-Pose, A. (1999). Innovation prone and innovation averse societies: economic performance in Europe. *Growth and Change*, 30 (1), pp.75–105.

Rodríguez-Pose, A., & Crescenzi, R. (2006). *R&D, Spillovers, Innovation System and the Genesis of Regional Growth in Europe.* BEER Paper n°5.

Rodríguez-Pose, A., di Cataldo, M., Rainoldi, A. (2014). *The Role of Government Institutions for Smart Specialisation and Regional Development.* JRC Technical Reports. S3 Policy Brief Series No. 04/2014. Luxembourg: Publications Office of the European Union.

Rodrik, D. (ed.) (2003). *In Search of Prosperity: Analytic Narratives on Economic Growth.* Princeton, NJ: Princeton University Press.

Rosenthal, U., Boin, A., Comfort, L. (2001). *Managing Crises: Threats, Dilemmas, Opportunities*. Springfield: Charles C. Thomas.

Rosling, H. (2018), with Ola Rosling and Anna Rosling Rönnlund. *Factfulness: Ten reasons we're wrong about the world – and why things are better than you think.* London: Sceptre.

Rothstein, B. & Teorell, J. (2005). What is Quality of Government? A Theory of Impartial Political Institutions. *Quality of Government Working Paper* 6.

Rutten, R., Boekema, F., Kuijpers, E. (2003). *Economic Geography of Higher Education: Knowledge Infrastructure and Learning Regions.* London: Routledge.

Saxenian, A. (1996). *Regional Advantage: Culture and Competition in Silicon Valley and Route 128.* Cambridge: Harvard University Press.

Schakel, A. (2009). A postfunctionalist theory of regional government: An inquiry into regional authority and regional policy provision. Doctoral dissertation. Amsterdam: VU University.

Scharpf, F. (1999). Föderale Politikverflechtung: Was muß man ertragen – Was kann man ändern? *MPIfG Working Paper* 99/3. Köln: Max-Planck-Institut für Gesellschaftsforschung.

Schobben, R. (2000). Politieke regio en Europese Unie. Doctoral dissertation. Delft: Eburon.

Segers, J. (1983). *Sociologische onderzoeksmethoden: Deel 1, Inleiding tot de structuur van het onderzoeksproces en tot de methoden van dataverzameling.* Assen: Van Gorcum.

Shestack, M. (ed.) (1985). 'How'm I Doing?': The Wit and Wisdom of Ed Koch. New York: Dell Publishing.

Smith, B.C. (1985). *Decentralization: The Territorial Dimension of the State.* London: George Allen & Unwin.

Soete, L. & Arundel, A. (eds) (1993). *An integrated approach to European innovation and technology diffusion policy: A Maastricht memorandum*. Luxembourg: Publications Office of the European Communities.

Soete, L., Verspagen, B. & ter Weel, B. (2009). Systems of Innovation. *UNU-MERIT Working Paper* N°2009-062. Maastricht: UNU-MERIT.

Sorensen, E. & Torfing, J. (2007). Introduction Governance Network Research: Towards a Second Generation. In Sorensen, E. & Torfing, J. (eds), *Theories of Democratic Network Governance* (pp.1-21). Basingstoke: Palgrave Macmillan.

Stahlecker, T. & Koschatzky, K. (2010). Cohesion policy in the light of place-based innovation support: New approaches in multi-actors, decentralised regional settings with bottom-up strategies? *Fraunhofer-ISI Working Paper*, N°R1/2010. Karlsruhe: Fraunhofer-ISI.

Stake, R. (1995). *The Art of Case Study Research*. Thousand Oaks: Sage Publications.

Stake, R. (2006). *Multiple Case Study Analysis*. New York: Guilford.

Stan, L. (2010). Archival Records as Evidence. In Mills, A., Durepos, G., & Wiebe E. (eds), *Encyclopaedia of Case Study Research* (pp.29-31). Thousand Oaks: Sage Reference Publications.

Tödtling, F. & Trippl, M. (2005). One size fits all? Towards a differentiated regional innovation policy approach. *Research Policy,* 34, pp.1203-1219.

Toonen, T. (2008). Book review of Public Management: Old and New, by Laurence E. Lynn Jr., London: Routledge, 2006, 210 pp.In *Journal of Policy Analysis and Management.* 27(1), pp.222-225.

Toonen, T. (2009). Good Governance for the Wadden: The organisation of decision-making for sustainability. The Workshop 4 (WOW4), *Workshop in Political Theory and Policy Analysis*, Indiana University, Bloomington, USA, 3-6 June.

Toonen, T. (2014). Administrative Reform: Analytics. In Peters, B.G. & Pierre, J. (eds), *The SAGE Handbook of Public Administration* (pp.499-510). Thousand Oaks: Sage Reference Publications.

Toonen, T. (2015). De Terugkeer van de Gemeentekunde? Transformatie door Devolutie. Presentatie gemeente Delft, 14 December.

Toonen, T., Van Dam, M., Glim, M. & Wallagh, G. (1998). *Gemeenten in ontwikkeling: Herindeling en kwaliteit.* Assen: Van Gorcum.

Toonen, T. & Staatsen, A. (2004). *Goed bestuur voor de Wadden: Een essay over de organisatie van duurzaamheidsbesluitvorming*. Leiden, Oude Wetering & Haarlem, in opdracht van de Adviesgroep Waddenzeebeleid (AGW).

Trippl, M., Asheim, B. & Miörner, J. (2016). Identification of Regions with Less-Developed Research and Innovation Systems. In Davide Parrilli, M., Dahl Fitjar, R. & Rodríguez-Pose, A. (eds) (2016). *Innovation Drivers and Regional Innovation Strategies* (pp.23-44). London: Routledge.

Trochim, W. (1989). Outcome Pattern Matching and Program Theory. *Evaluation and Program Planning*, 12, pp.355-366.

Ulmer, R., Seeger, M., & Sellnow, T. (2007). Post-crisis communication and renewal: Expanding the parameters of post-crisis discourse. *Public Relations Review*, 33, pp.130–134.

Uyarra, E. & Flanagan, K. (2009). From regional innovation systems to regions as innovation policy spaces. *OPENLOC Working Paper Series* WP6/2009.

Van Braam, A. (1986) met medewerking van M.L. Bemelmans-Videc. *Leerboek Bestuurskunde. A. Tekstboek.* Muiderberg: Dick Coutinho.

Vissers, G. & Dankbaar, B. (2013). Knowledge and Proximity. *European Planning Studies*, 21(5), 700–721.

Wiig, H. (1999). *An empirical study of the innovation system in Finnmark*. Oslo: STEP.

Wolfe, D. & Holbrook, A. (eds) (2000). *Innovation, Institutions and Territory: Regional Innovation Systems in Canada.* Montreal: McGill-Queens University Press.

Wolfram Cox, J. & Hassard, J. (2010). Triangulation. In Mills, A., Durepos, G. & Wiebe E. (eds), *Encyclopaedia of Case Study Research* (pp.944-948). Thousand Oaks: Sage Reference Publications.

Wolfson, D. (1988). *Publieke sector en economische orde.* Groningen: Wolters-Noordhoff.

Yin, R.K. (2003). *Case Study Research: Design and Methods*. Third edition. Thousand Oaks: Sage Publications.

Yue, A. (2010). Validity. In Mills, A., Durepos, G. & Wiebe E. (eds), *Encyclopaedia of Case Study Research* (pp.959-963). Thousand Oaks: Sage Reference Publications.

Yuliani, E. (2004). Decentralization, deconcentration and devolution: what do they mean? *Interlaken Workshop on Decentralization*, Interlaken, Switzerland, 27-30 April.

A

Appendices

Appendices

Appendix 1: Case study protocol

Topics and questions covered in the case study protocol:	

Stage 0: preparation stage (up to 3 months' duration)	• Factual information from the RITTS contract: date, signature, organisation representing the region, start date of RITTS project, duration of RITTS project, RITTS budget, agreed milestones, objectives of RITTS project, description of studies to be undertaken and/or surveys to be carried out, etc.
	• Project leader: name of the organisation, relationship with the contract signatory (whether in the same or different organisation), role in RITTS project, tasks assigned, presence of a project team, its composition, presence of a management unit, staff at the project leader's organisation, division of labour within team of experts.
	• Project leader:
	   ○ What is the organisation's motivation for applying to the RITTS?
	   ○ What formal competencies does the organisation have to implement the output of the RITTS project?
	   ○ Which organisational modalities have been put in place to manage the RITTS project (newly created unit, double use of existing unit)?
	   ○ Is the project leader perceived by regional stakeholders as the 'right' organisation to manage RITTS?
	• Team of experts: composition of the team, the role of the experts, their research activities, necessary support to the project leader, the secretariat to the Steering Committee or another group. Which tasks have they been assigned?
	• Team of experts:
	   ○ Were they selected from EU-approved list, or from elsewhere?
	   ○ What share of the RITTS project budget goes to experts?
	   ○ Have any provisions been made to continue working with experts post-RITTS? To do what?
	• Steering Committee: date of creation, membership, the role of the Steering Committee, tasks assigned, the organisation (support of a secretariat or otherwise) and the frequency of meetings.
	• Steering Committee:
	   ○ What stakeholders are represented? What stakeholders are not?
	   ○ Why this set-up and not another?
	   ○ Are there other ways to represent stakeholders?
	   ○ How is the Steering Committee involved in Stage 1 (data collection, problem definition), Stage 2 (decision-making) and Stage 3 (implementation, evaluation & monitoring) post-RITTS?
	• Reporting modalities to the European Commission: the frequency of reports, topics to be reported, and the purpose of reporting (release funding tranche of RITTS budget etc.);
	• Are there other topics, issues or observations worth mentioning about Stage 0 of this particular RITTS project?

Stage 1: data gathering, data analysis, and reporting stage (6-9 months duration)	• Purpose of Stage 1:
	   ○ To help solicit support for the initiative.
	   ○ To gather 'fresh' data and get input from regional enterprises.
	   ○ To provide a factual, evidence-driven basis for developing a plan of action in the next stage.
	   ○ To provide the basis for a decision as to whether or not to proceed to the next detailed stage, and if so, how to proceed.
	   ○ Other, namely…
	• Methods used to gather data (interviews, surveys, workshops, etc).
	• The reporting of the demand analysis, supply analysis, and other forms of analysis.

	- Presentation of results in the region. - Summary of results and interesting findings. - Reactions from enterprises and regional stakeholders. - Translation of data into a definition of the regional innovation *problématique*. - Problem definition: - Is it an accurate reflection of regional firms' innovation needs ('demand' side of innovation support)? - Is it an accurate reflection of ITT infrastructure problems ('supply' side of innovation support)? - Is it an accurate reflection of the regional innovation system's *problématique* (system deficiencies in peripheral, old industrial or metropolitan innovation systems)? - Is there any new information and are regional stakeholders already aware of these problems? - Distribution of labour between the team of experts, the RITTS project leader, the RITTS project team, and the Steering Committee. - What is the duration of Stage 1? Are extensions of contract needed, and what are the reasons stated? - Other topics, issues, observations worth mentioning about Stage 1 of this particular RITTS project.
Stage 2: consensus-building and decision-taking stage (5-6 months duration)	- Purpose of Stage 2: - To validate the Stage 1 results and acknowledge the work done. - To organise a regional debate to present and discuss Stage 1 results. - To provide a blueprint for the development and launch of the regional innovation strategy. - To reach an agreement and decide on the regional innovation strategy to be implemented in Stage 3. - To provide the basis for a decision as to whether or not to proceed to the next detailed stage, and if so, how to proceed. - Other, namely… - Translation of problem definition undertaken in Stage 1 into regional objectives and into regional priorities. - Definition of policy objectives: - Is this an accurate reflection of the Stage 1 problem definition? - Preparing options and agreeing on the approach to deal with the problem identified in Stage 1. Are the project leader, the team of experts, and the Steering Committee in agreement over approach? - Formulation of options to achieve regional objectives and regional priorities. Are the project leader, the team of experts, and the Steering Committee in agreement over options? - Policy options: - Is this an accurate reflection of the problem definition? - Is there a clear link with policy objectives? How 'varied' are the options? Is the solution new or already existing? - What decision has been taken on the policy options? Has the decision been postponed, is additional research needed, or has there been no decision? - Building regional consensus with regional stakeholders. - Consensus-building: - What methods are being used (tricks, bargaining, etc.) - How are conflicts handled? - How, and by whom, is the final decision made? - What is the role of the project leader, the Steering Committee, and the team of experts in deciding on the final course of action. - Decision-taking: - How 'region-specific' is the final output of RITTS?

	- How 'strategic' is the final output of RITTS? - What difference will the output make to the region's innovation *problématique*? - Are the effects of the RITTS project output likely to last? - Presentation of options, priority actions and final strategy in the region. - Reactions from enterprises and from regional stakeholders. - Distribution of labour between the team of experts, the RITTS project leader, the RITTS project team, and the Steering Committee; - What is the duration Stage 2? Are contract extensions needed? If so, for how long and what are the reasons stated? - Are there other topics, issues or observations worth mentioning about Stage 2 of this particular RITTS project?
Stage 3: preparation of post-RITTS stage (up to 3 months duration)	- Purpose of Stage 3: - To present the priority actions agreed on in Stage 2. - To organise a regional debate on the implementation of the agreed priority actions and agreed regional innovation strategy. - To define the role of the leading stakeholders in the implementation of the agreed priority actions. - To obtain their commitment to this role. - To set up an evaluation and monitoring system. - To start implementing priority actions. - Other, namely… - Translation of regional objectives and/or priority actions in Stage 2 into concrete 'implementable' measures; - Implementation: - Have the objectives/options been translated into the chosen measures? - Is the implementation of the proposed policy response a subject of discussion? - What implementation modalities have been proposed? - Will it start to be implemented during the RITTS project or afterwards? - Has the implementation approach been agreed by the project leader, the team of experts, and the Steering Committee? - Has the 'who-does-what-when-how' in the implementation been formulated? Do the project leader, the team of experts, and the Steering Committee agree on distribution of responsibilities? - Has a date been agreed to start implementing the agreed measures and priority actions? - Has the approach to evaluation and monitoring been agreed by the project leader, the team of experts, and the Steering Committee? - Monitoring & evaluation: - Have preparations been made by the experts, the project leader, the Steering Committee or someone else? - What decision has been taken? By whom, and why in this way? - Has an evaluation and monitoring system been proposed and/or agreed? - Presentation of RITTS project outcomes in the region. - Reactions from enterprises and from regional stakeholders. - Distribution of labour between the team of experts, the RITTS project leader, RITTS project team, and the Steering Committee - What is the duration of Stage 3? Are contract extensions needed, and what are the stated reasons? - Are there other topics, issues or observations worth mentioning about Stage 3 of this particular RITTS project?

Other questions:	• Did the RITTS project operate as intended? What went differently? Were there any unintended effects, either positive or negative? • Was RITTS used to prepare for regional change? Did it manage to initialise regional change? Is that change linked to the region's history or to its regional identity? • Is the RITTS project considered 'good practice' by the region itself, by the European Commission, or by another group? • What lessons were learnt by the region, by the European Commission or by another group?

Appendix 2: Glossary of acronyms

DG XIII	Directorate General for Enterprise Policy
DG XVI	Directorate General for Regional Policy
DG ENTR	Directorate General for Enterprise Policy
DG REGIO	Directorate General for Regional Policy
EC	European Commission
ERDF	European Regional Development Fund
EU	European Union
Eurostat	Statistical Office of the European Union
FP	Framework Programme
GDP	Gross Domestic Product
ICT	Information and Communication Technologies
ITT [infrastructure]	Innovation support and Technology Transfer [infrastructure]
LFRs	Less Favoured Regions
R&D	Research & Development
R&I	Research & Innovation
RIS [theory]	Regional Innovation Systems [theory]
RIS3	Regional Innovation Strategy
RITTS	Regional Innovation and Technology Transfer Strategies and Infrastructures
RTD	Research and Technological Development
RTP/RIS	Regional Technology Plan/Regional Innovation Strategy
S3	Smart Specialisation Strategy
SMEs	Small and Medium-sized Enterprises
TECs	Training and Enterprise Councils

Appendix 3: Tables chapter 7

Table 7.2a:	Roles of regional government found, by government function and by regional innovation system type, in absolute numbers (n=6)			
Regional innovation system type:	**Functions of regional government:**			
	F1: Embodies the regional community	F2: Provides public services & policies	F3: Self-standing unit in a larger, multi-level system	F4: Acts as an agent of change
Peripheral (n=2)	2	2	2	2
Total: 8				
Old industrial (n=2)	3	5	4	0
Total: 12				
Metropolitan (n=2)	2	3	2	4
Total: 11				
Grand total: 31	7	10	8	6

Table 7.2b:	Roles of regional government found, by governance level and by regional innovation system type, in absolute numbers (n=6)			
Regional innovation system type:	**Levels of governmental governance:**			
	Operational	Procedural	Constitutional	Contextual
Peripheral (n=2)	2	3	2	1
Total: 8				
Old industrial (n=2)	5	3	3	1
Total: 12				
Metropolitan (n=2)	4	3	3	1
Total: 11				
Grand total: 31	11	9	8	3

Table 7.3a:	Roles of regional government found, by government function and by government system type, in absolute numbers (n=6)			
Government system type:	**Functions of regional government:**			
	F1: Embodies the regional community	F2: Provides public services & policies	F3: Self-standing unit in a larger, multi-level system	F4: Acts as an agent of change
Federal: Germany (n=3)	3	8	7	0
Total: 18				
Unitary: United Kingdom (n=3)	4	2	1	6
Total: 13				
Grand total: 31	7	10	8	6

Table 7.3b:	Roles of regional government found, by governance level and by government system type, in absolute numbers (n=6)			
Government system type:	**Levels of governmental governance:**			
	Operational	Procedural	Constitutional	Contextual
Federal: Germany (n=3)	7	6	5	0
Total: 18				
Unitary: United Kingdom (n=3)	4	3	3	3
Total: 13				
Grand total: 31	11	9	8	3

Table 7.4a:	**Roles of regional government found, by government function and by regional government organisation type, in absolute numbers (n=6)**			
Regional government organisation type:	**Functions of regional government:**			
	F1: Embodies the regional community	F2: Provides public services & policies	F3: Self-standing unit in a larger, multi-level system	F4: Acts as an agent of change
Single-purpose (n=4)	5	7	6	2
Total: 20				
General-purpose (n=2)	2	3	2	4
Total: 11				
Grand total: 31	7	10	8	6

Table 7.4b:	**Roles of regional government found, by governance level and by regional government organisation type, in absolute numbers (n=6)**			
Regional government organisation type:	**Levels of governmental governance:**			
	Operational	Procedural	Constitutional	Contextual
Single-purpose (n=4)	7	6	5	2
Total: 20				
General-purpose (n=2)	4	3	3	1
Total: 11				
Grand total: 31	11	9	8	3

Appendix 4: Heat maps chapter 7

PROBLEMS	I.1	I.2	I.3	I.4	II.1	II.2	II.3	II.4	III.1	III.2	III.3	III.4	IV.1	IV.2	IV.3	IV.4	
P/NBB																	4
P/H&I																	4
OI/AC																	9
OI/NEE																	3
M/HB																	5
M/SCM																	6
N° of Roles	2	2	2	1	4	3	2	1	4	2	2	0	1	2	2	1	31
Roles:	I.1	I.2	I.3	I.4	II.1	II.2	II.3	II.4	III.1	III.2	III.3	III.4	IV.1	IV.2	IV.3	IV.4	
Functions:	Regional community				Public services/policies				Self-standing unit in MLG				Agent of change				

AUTONOMY	I.1	I.2	I.3	I.4	II.1	II.2	II.3	II.4	III.1	III.2	III.3	III.4	IV.1	IV.2	IV.3	IV.4	
DE/NBB																	4
DE/AC																	9
DE/HB																	5
UK/H&I																	4
UK/NEE																	3
UK/SCM																	6
N° of Roles	2	2	2	1	4	3	2	1	4	2	2	0	1	2	2	1	31
Roles:	I.1	I.2	I.3	I.4	II.1	II.2	II.3	II.4	III.1	III.2	III.3	III.4	IV.1	IV.2	IV.3	IV.4	
Functions:	Regional community				Public services/policies				Self-standing unit in MLG				Agent of change				

ORGANISATION	I.1	I.2	I.3	I.4	II.1	II.2	II.3	II.4	III.1	III.2	III.3	III.4	IV.1	IV.2	IV.3	IV.4	
SP/DE/NBB																	4
SP/DE/AC																	9
SP/UK/H&I																	4
SP/UK/NEE																	3
GP/DE/HB																	5
GP/UK/SCM																	6
N° of Roles	2	2	2	1	4	3	2	1	4	2	2	0	1	2	2	1	31
Roles:	I.1	I.2	I.3	I.4	II.1	II.2	II.3	II.4	III.1	III.2	III.3	III.4	IV.1	IV.2	IV.3	IV.4	
Functions:	Regional community				Public services/policies				Self-standing unit in MLG				Agent of change				

Legend heat maps:

Public Administration framework of analysis of the role of regional government in regional innovation policy design				
	Functions of regional government:			
Levels of governance:	I. Embodies the regional community	II. Provides public services and policies	III. Is a self-standing unit in a larger, multi-level system	IV. Acts as an agent of change
1. Operational	I.1 *'community-driven organiser'*	II.1 *'responsive problem-solver'*	III.1 *'relations-handler'*	IV.1 *'change manager'*
2. Procedural	I.2 *'innovation community-builder'*	II.2 *'solution-enabler'*	III.2 *'pro-active networker'*	IV.2 *'agent of change'*
3. Constitutional	I.3 *'regional interest establisher'*	II.3 *'system weather-proofer'*	III.3 *'competent co-producer'*	IV.3 *'innovation visionary'*
4. Contextual	I.4 *'regional history connector'*	II.4 *'regional-needs-first proponent'*	III.4 *'regional power builder'*	IV.4 *'regional futurist'*

Explanation of terms and abbreviations:			
PROBLEMS	Dominant regional innovation *problématique* of the regional innovation system type		
	P = Peripheral	OI = Old industrial	M = Metropolitan
AUTONOMY	Region's administrative position within the government system type		
		DE = Germany = federal	UK = United Kingdom = unitary
ORGANISATION	Regional government organisation type in charge of the policy design process		
	SP = single-purpose	= a functional, mission-mandated organisation type, accountability is upwards to the parent organisation	
	GP = general-purpose	= a territorial, democratically elected organisation type, accountability is downwards to the voters	
REGIONS	NBB	Neubrandenburg	Germany
	H&I	Highlands and Islands	United Kingdom
	AC	Aachen	Germany
	NEE	North East of England	United Kingdom
	HB	Hamburg	Germany
	SCM	South Coast Metropole	United Kingdom

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English summary

Introduction

This study is about the role of regional government in policy-making, more particular in designing 'context-specific' regional innovation policy, and investigates how regional government matters. The study develops a Public Administration framework to conceptualise this role and applies this framework to empirically capture this role in six European regions located in Germany and the United Kingdom. 'Context-specific' regional innovation policy is defined as policy that seeks to strengthen firms' ability to innovate by tackling the specific 'systemic failures' of the regional innovation system in which firms operate.

      The organisation of the study is as follows: after the introductory chapter 1, chapters 2 and 3 present the theoretical framework, chapter 4 outlines the research design, chapter 5 describes the case studies, chapter 6 analyses the case studies, chapter 7 presents the results and conclusions, and chapter 8 closes with an outlook.

Background of the study

The background of this study interest lies in the change in policy ideas underpinning European regional policy, also known as 'smart specialisation' which promotes context-specific, innovation-led regional economic transformation. Different from previous EU intervention in this area focussing predominantly on supply-side, infrastructure-oriented measures, 'smart specialisation' refers to the role of regional government as a facilitator to make this process of innovation-driven diversification happen. In collaboration with the region's key innovation stakeholders, regional government is expected to construct 'place-based' competitive advantages through policy measures. The policy is about endogenous development, starting from what the region has to offer. Policy choices are expected to be informed choices, guided by factual evidence. The implications of this change in policy ideas for the design of regional innovation policy, but also for its evaluation in terms of 'successful' versus 'unsuccessful' are wide-ranging. Designing a policy that is truly *innovation-driven*, *contextual*, *collective*, and *informed* – in EU terminology 'smart' – embodies a new type of policy and requires a new style of policy-making. Both put high and unprecedented demands on the institutional capacities of regional government.

      Despite this change in policy ideas increasingly guiding EU intervention since the mid-1990s, the underlying assumptions about regional government as a policy actor and the way in which this actor takes policy decisions have, however, remained unchanged. Regional government continues to be viewed as a rational actor, assumed to have perfect knowledge of the problem in all its facets and to be aware of all the possible solutions. The policy process continues to be viewed in an instrumental-economic way in which problems are assumed to guide policy choices and the success of a policy is assessed by its goal attainment. Involving stakeholders and collecting data on the region's obstacles to innovation are assumed to deliver a 'context-specific' problem definition from which the policy solution emerges quasi-automatically.

      This is problematic for at least three reasons. Firstly, based on personal experience managing European regional innovation projects in the second half of the 1990s, I witnessed a different behaviour by regional government organisations, far less rational and 'automatic' than theory assumes. I saw a mismatch between theory (*'Soll'*) and practice (*'Ist'*) that could not be left unexamined. There is a need to investigate to what extent and if so, how regional government

matters for the design of 'context-specific' regional innovation policy. This is the research question of this study.

Secondly, opening up the black box of policy design could help explain this mismatch, yet this is still an unexplored area of academic research. The Regional Innovation Systems literature has made great strides in developing regional typologies and investigating what theoretical policy responses makes sense for what region types. However, in order to understand why – in real life – proposed policy solutions can be vastly different between seemingly similar regions, one has to analyse the way in which regional government arrives at policy decisions. Public Administration as a scientific discipline is equipped to conceptualise the role of regional government and open up the black box of policy design for analysis.

Thirdly, the rational actor assumptions that underpin the view on government in the Regional Innovation Systems literature – and which inspired the before-mentioned European regional innovation projects – are problematic. These assumptions limit the researcher in being able to understand how policy decisions come about, in being able to identify what factors impact decision-making, in being able to explain cross-regional policy variation. Contrary to assuming that the correct problem definition will produce the appropriate innovation policy response quasi automatically, Public Administration scholars point out that policies are the result of interaction, not of data. What qualifies the innovation policy response as being 'appropriate' depends on the analytical perspective taken.

This is why this study develops a Public Administration framework to conceptualise the role of regional government in a more differentiated way than is done in the Regional Innovation Systems literature looking at this role through different analytical lenses.

Research question and research method

The research question of this study is: to what extent and if so, how does regional government matter for the design of 'context-specific' regional innovation policy? The aim is to contribute to a better understanding of regional government as a policy-making actor to develop such a policy. The study's theoretical relevance resides in its contribution to develop a new, differentiated conceptualisation of the role of regional government in policy design that helps better grasp 'context-specific' regional innovation policy. The study's policy relevance resides in its contribution to empower regional governments with increased awareness of their room of manoeuvre to strengthen a region's innovation performance irrespective of a region's formal competencies.

In order to answer this research question, the study employs a descriptive, multiple-case study research method described in chapter 4. Each of the six case studies consists of a European region that participated in the EU programme RITTS[1] in the period 1994-1998. RITTS, together with the RTP/RIS[2] programme, are the pilot predecessors of the smart specialisation strategy underpinning current European regional policy. Each RITTS project had to formulate a 'context-specific' regional innovation strategy through a three-staged, standardised process on the basis

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[1] Regional Innovation and Technology Transfer Strategies and Infrastructures (managed by the European Commission, DG ENTR in charge of European innovation policy; participation was open to all EU regions).

[2] Regional Technology Plan/Regional Innovation Strategy (managed by the European Commission, DG REGIO in charge of European regional policy; participation was open to EU regions with a GDP below 75% of EU average).

of newly collected regional data and in collaboration with the innovation stakeholders in the region. The implementation of this agreed policy was outside the scope of RITTS and is also outside the scope of this research. The study's focus is on analysing the decision-making process that leads up to the agreed policy in each of the six RITTS regions.

In order to translate the study's theoretical research question into an empirically observable one for which data can be collected, regional government – which is the study's unit of analysis – is defined as the RITTS project leader, the regional government organisation in charge of the policy design process. Analysing 'who' decides 'what', 'when', 'how' and if possible 'why' during the three stages of the RITTS project is assumed to generate a picture of what roles regional government actually plays in policy development as opposed to deducing these roles from formal competencies, official mandates and task descriptions. Investigating how 'context-specific' regional innovation policy comes about in real life is the approach taken in this study to identify how regional government matters.

Methodological as well as practical criteria guided the selection of the six case studies. The nature of the region's innovation *problématique* and the regional government's administrative position within the national government system were two guiding methodological criteria. More practical criteria related to the quantity, quality, language, and accessibility of the RITTS records and documents held at the European Commission archives. Qualitative data were gathered from an existing dataset through archival records research and documentation analysis, as well as personal observations managing RITTS and RTP/RIS projects in the second half of the 1990s on behalf of the European Commission.

The six RITTS regions that met these criteria and that were selected as case studies represent three distinct regional innovation system types – peripheral, old industrial, metropolitan – and are located in Germany and the United Kingdom, countries representing federal respectively unitary government system types.

Regional Innovation Systems theory

The RITTS programme took inspiration from the 'regional innovation systems' concept which in turn was inspired by the 'national innovation systems' concept. Chapter 2 explains these concepts and defines the theoretical typology of regional innovation problems and context-specific policy answers used in this study. This categorisation serves as the theoretical benchmark to determine to what extent the empirical reality in the six regions confirms what theory predicts.

Research done by evolutionary economists in the 1980s and early 1990s had evidenced that different levels of research and development expenditures could only partly explain cross-country differences in innovation performance. Because innovation processes came to be seen as interactive and institutionally shaped processes, the emphasis in government intervention on tackling market failures was complemented with tackling failures in the wider 'system of innovation'.

This study follows Lundvall's definition (1992): A 'system of innovation' consists of *elements* and *linkages* which interact in the production, diffusion and use of new and economically useful knowledge; through this interaction capabilities are developed that determine the innovation performance of the system as a whole. 'Systemic failures' can arise in the institutional

composition of the system's elements (including missing elements) and in the quality of the linkages between those elements (including missing linkages).

Beginning of the 1990s, regional geographers linked innovation to proximity, viewing innovation processes as socially embedded learning processes among innovation-relevant actors; processes that are not placeless, but territorially bound due to the tacit nature of knowledge. Inter-regional differences in innovation performance outdid national differences and they did so persistently, pointing towards powerful institutional factors at play at the regional level hitherto little investigated. With 'institutions' defined as both formal organisations as well as all rules that shape actors' behaviour, these factors seemed to explain the success of highly innovative regions such as Baden-Württemberg, Lombardia, Rhône-Alpes, and Catalonia in Europe, and Silicon Valley and the Greater Boston Area in the United States.

This study follows Autio's definition (1998): A 'regional innovation system' consists of two sub-systems embedded in a common regional, socio-economic and cultural setting. In schematic format, these are: (1) a knowledge application and exploitation sub-system, consisting of companies in their function as 'knowledge users', organisations that have a *demand for knowledge*; and (2) a knowledge generation and diffusion sub-system, consisting of 'knowledge creators', organisations that engage in a *supply of knowledge*, such as universities and research institutions, but also technology transfer organisations and other intermediaries. System deficiencies can occur within and between these sub-systems. The RITTS programme served to help regional governments detect and tackle regional innovation system deficiencies. The starting point in any RITTS project was the collection of regional data in Stage 1 to undertake a 'demand' and a 'supply' analysis mirroring these two sub-systems.

Following Tödtling & Trippl's (2005) typology, three main regional innovation system deficiencies are distinguished in this study (also referred to as 'regional innovation *problématique'* to emphasise the interrelated nature of regional innovation problems). These are 'organisational thinness' referring to a lack of institutional elements; 'lock-in' referring to elements and linkages being outdated; and 'fragmentation' referring to missing linkages within and between sub-systems. Each of the three regional innovation system deficiencies are considered to be the dominant innovation *problématique* in a particular type of region, notwithstanding the fact that each region might, in real life, face a mix of deficiencies. Following Tödtling & Trippl in their ideal-typical approach, peripheral regions are seen to suffer first and foremost from 'organisational thinness'; old-industrial regions from 'lock-in'; and metropolitan regions from 'fragmentation'. With different types of regional innovation systems facing different types of system deficiencies, they propose a 'context-specific' policy mix of measures to tackle 'organisational thinness', 'lock-in', and 'fragmentation'.

Tödtling & Trippl's typology of regional innovation *problématiques* and their 'context-specific' policy measures is used as the theoretical benchmark against which the six RITTS regions are compared. In chapter 5, pattern matching is undertaken to determine to what extent the observed pattern – in terms of the problem definition established in Stage 1 of the RITTS project, and the policy response agreed upon at the end of the RITTS project in Stage 3 – matches the theoretical predicted pattern. The purpose of pattern matching is 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 are presented at the end of chapter 5. Firstly, the diagnosis of the region's innovation *problématique* in Stage 1 is in all six regions very close, and in some cases identical to what theory predicts for that particular system type despite the different research teams hired and the different research methods used to collect and analyse regional data. The conclusion is that the empirically observed problem definition in all six case studies closely matches the theoretically predicted one.

Secondly, similar problem definitions, however, seem to generate a variety of policies that do not follow as logically and automatically from the problem definition as theory predicts. In all six regions, the final policy mix of measures coincides only partly, if at all, with what theory predicts. Put differently, there is a mismatch between the empirically observed policy response and the theoretically predicted one. The conclusion is that having a region-specific problem definition does not necessarily translate into a regional innovation policy as 'context-specific' as theory predicts. Regions facing similar innovation problems need not come up with similar policy solutions. 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 that cannot be explained in the rational actor model. Understanding what happens requires opening up the policy process itself to analyse how decisions came about in each of the six regions and what role regional government played in reaching those decisions. In order to do so, the study proposes a Public Administration framework of analysis which is outlined in chapter 3.

Public Administration framework of analysis

To conceptualise the role of regional government in a regional innovation system, chapter 3 first identifies what the purpose or function of regional government within a government system is. Irrespective of the degree of regional autonomy bestowed upon regional government, Public Administration literature distinguishes between four main functions. This study follows the classification by Toonen et al. (1998).

A first function of regional government is that of being the institutionalised expression of the region perceived as 'community'. For many, it is the most classical function. Particularly in the 'South-European family of states' like Italy, Spain and Portugal, regional government is first and foremost seen as the democratic representation of the community and the community's preferences.

A second function of regional government is to provide citizens with public goods and services, such as urban planning and land use, infrastructure planning, environmental protection, economic development, utility services, and the like. In the typology of state traditions, the 'Anglo-Saxon family' views regional government first and foremost in its function of 'public service provider' with the United Kingdom being the prime example of this tradition.

A third function of regional government is that of being a 'political-administrative entity' for a given territory, in its own right and in relation to other tiers of government, part of a wider, multi-level governmental system. Regional government is seen in terms of territorial distribution of power and territorial demarcation of competencies between government tiers. This view of regional government corresponds to the 'Continental-European family of states' which encompasses countries such as Austria, Germany, and France, but also the Netherlands.

A fourth function of regional government, finally, centres on government's ability to handle change. Change can be interpreted as 'crisis' in which government becomes an institution of 'last resort', the only organisation 'still standing', managing the crisis, ensuring business continuity. Managing change can also refer to a planned, intentional process of transformation with government being the 'architect of change'. The latter definition is very similar to what the EU has in mind with the role of regional government in its 'smart specialisation' agenda.

How well regional government succeeds in performing these functions is in this study assessed according to the classification by Toonen et al. (1998) and Toonen (2015). The four levels of governmental governance distinguished represent different administrative values of policy design. This study follows the definition by Hood (1991) with a modification to encompass a fourth administrative value. Although these sets of administrative values are not mutually exclusive, for the purpose of this study each governance level is associated with one dominant administrative value. When designing policy, these different administrative values meet and interact whereby these values can be complementary as well as conflicting. The four governance levels at which regional government functions can be executed and the corresponding administrative values against which regional government can be assessed are:

1) Operational level, which is about 'responsiveness' to regional problems and societal needs; government is effective in problem-solving and efficient in the use of (scarce) resources.

2) Procedural level, which is about 'legitimacy' in the way in which government operates; regional government is seen as fair, impartial, democratic, transparent, and legitimate.

3) Constitutional level, which is about 'resilience'; regional government creates the right conditions for operating and its actions generate impact, regional government secures 'survival'.

4) Contextual level, where the key issue is 'congruence'; regional government is able to contextualise its actions matching 'time and place' (*this is how it is done here'*) and its actions resonate.

Next in chapter 3, the four functions are translated for the organisation of 'context-specific' regional innovation policy-making based on a regional innovation system perspective and are redefined in this study as follows:

A first function of regional government is for it to represent the regional community and to establish the 'regional interest' vis-à-vis innovation. A second function of regional government is to provide public services and define public policies to help the regional innovation system to develop, diffuse, and utilise innovations. A third function of regional government is to position itself within a larger, multi-level government and innovation system connecting the region to other sectoral, national, and global innovation systems. And a fourth function of regional government is to act as an 'agent of change' in the regional innovation system or to apply innovation as a change-coping mechanism in an increasingly global world.

Combining these four functions of regional government (*'what'*) with the four governance levels at which the execution of these functions can take place and be assessed (*'how'*) results in sixteen theoretical role possibilities for regional government in policy design. This 4x4 matrix serves as the Public Administration framework of analysis for the empirical case studies and is presented below in table format.

Public Administration framework of analysis **of the role of regional government in regional innovation policy design**				
	Functions of regional government:			
Levels of governance:	Embodies the regional community	Provides public services and policies	Is a self-standing unit in a larger, multi-level system	Acts as an agent of change
Operational	*'community-driven organiser'*	*'responsive problem-solver'*	*'relations-handler'*	*'change manager'*
Procedural	*'innovation community-builder'*	*'solution-enabler'*	*'pro-active networker'*	*'agent of change'*
Constitutional	*'regional interest establisher'*	*'system weather-proofer'*	*'competent co-producer'*	*'innovation visionary'*
Contextual	*'regional history connector'*	*'regional-needs-first proponent'*	*'regional power builder'*	*'regional futurist'*

The analysis of the policy-making process in each of the six case studies is undertaken in chapter 6 on the basis of this Public Administration framework. The four levels of governance are operationalised in chapter 4 in different analytical dimensions referred to as 'indicators'. A total of 15 indicators are utilised to structure the multiple-case analysis in chapter 6. The purpose of the analysis is to reveal the real-life roles regional government takes on and acts upon in the policy-making process to succeed at developing a 'context-specific' regional innovation policy.

Results and conclusions

The findings of the study emerging from the multiple-case analysis in chapter 6 are presented in chapter 7 and are as follows. Among the six case studies *a great variety* of regional government roles was found. The variety concerns both the regional government functions as well as the governance levels at which these functions were executed. Secondly, all regional governments engaged in *multiple* roles during the policy process to design their 'context-specific' regional innovation policy; these roles were enacted simultaneously as well as interchangeably. Thirdly, each of the six regions exhibited *one dominant role* which was either supported or complemented with one or more other regional government roles. With 31 roles in total found for all six case studies, covering 15 of the 16 theoretical role possibilities, ranging from 3 to 9 regional government roles per region (on average 5 roles per region), this study concludes that the empirical variety is far greater than theory assumes.

The role of 'responsive problem-solver' and of 'relations-handler', representing two different government functions executed at the operational governance level, are the roles most frequently found among the case studies. Four of the six regions exhibited these roles, albeit in

varying degrees of importance (in only two of these four regions they were the dominant role). Finding these roles is not entirely unexpected given that the managerial format of the RITTS project 'pushed' regional governments in this direction, having to address the region's innovation problems (the project leader was expected to act as a 'responsive problem-solver') through a consensus-building process among the region's key stakeholders (the project leader was expected to act as a 'relations-handler'). Notwithstanding, these are the two key roles described in the Regional Innovation Systems literature as to how regional government matters for the design of 'context-specific' regional innovation policy. And these roles were evidenced in this study. However, other roles *not* captured in this literature mattered as well and were in four of the six regions even more important.

The second place is taken up by the role of 'solution-enabler', executed at the procedural governance level, which was found in three of the six regions. The third place is taken up by a mixture of 8 different roles, covering operational, procedural and contextual governance levels, with each role being found in two of the six regions each time. Fourth and final place is taken up by 3 different roles that were found in one of the six regions each time. The only role not found in any of the six case studies is that of 'regional power builder'. It is the role that prepares for a substantial increase in regional autonomy, and ultimately for regional independence.

The governance level at which regional governments were most active in the policy-making process was the operational one. Of the 31 roles found in total for all six case studies, 11 were executed at the operational governance level, compared to 9 at the procedural, 8 at the constitutional, and 3 at the contextual governance level.

The multiple roles that all regional governments engaged in during the policy process to design their 'context-specific' regional innovation policy belonged to different governance levels. Two of the regions engaged in policy design at 2 different governance levels; three of the six regions combined 3 governance levels, and one region engaged in policy design at all 4 governance levels.

The dominant role from which regional governments approached the policy design could be at any governance level, but the procedural level did not feature among the six case studies. Two of the six regions approached the policy design from the operational governance level, two from the constitutional, and two from the contextual level. Whatever role became the dominant role seemed to be strongly linked to the region-specific motivation to participate in the RITTS programme. With each governance level representing a different set of administrative values, what was considered a successful deliverable of the RITTS project – a 'context-specific' regional innovation policy – differed per region. It could concern 'responsiveness' to regional problems, 'resilience' in dealing with change and generating impact, and 'congruence' in designing policy measures 'time and place' appropriate.

Based on a pattern search, the study observes that the variety in roles found exists irrespective of the region's dominant innovation *problématique* or the type of regional government organisation in charge of policy design (general-purpose, territorial versus single-purpose, functional). Neither of these two variables seemed to correspond with particular regional government roles; both variables corresponded with any of the roles found.

A stronger pattern seemed observable when regrouping the regions by government system type (federal versus unitary), albeit the small number of regions investigated (n=6) demands caution. All three German regions enacted roles belonging to two government functions: that of 'public service provider' followed by that of 'being part of a larger, multi-level system'. These functions were executed at all but the contextual governance level. None of the German regions engaged in the function of 'change agent'. The British regions showed a more varied role uptake across all four government functions and across all four governance levels, although two of the three British regions enacted roles belonging to the other two government functions: that of 'representing the regional community' and 'acting as an agent of change'. These pattern search findings for both sets of regions differ from what one would expect based on the categorisation of state traditions mentioned earlier. To what extent this 'country effect' is the manifestation of a pattern or a random finding is outside the scope of this study and requires additional research in more regions.

Understanding how 'context-specific' regional innovation policy comes about requires a differentiated conceptualisation of the role of regional government. This is the overall conclusion of this study. A differentiated conceptualisation of the role of regional government allows to empirically capture the *variety of roles* that regional government takes on in real life to deliver such a policy as well as the variety in roles *between regional governments*.

A differentiated conceptualisation of the role of regional government also allows to capture empirically the different governance levels at which these roles are executed, reflecting *different administrative values* of policy design. The interaction of these different and not necessarily complementary administrative values causes policy design to be a demanding and time/place specific process.

Finally, applying this differentiated conceptualisation to analyse six policy design processes indicated the impact of a 'contextual' variable on policy-making which seemed to frame collective action at regional level. Regions facing similar innovation problems chose different policy solutions. Explaining cross-regional policy variation based on this variable is, however, outside the scope of this descriptive study and requires new research.

As far as this study is concerned, it has delivered additional insights about 'context-specific' regional innovation policy and has contributed to a better understanding – conceptually, analytically and empirically – of the role of regional government as a policy-making actor to develop such a policy.

S

Nederlandse samenvatting

Introductie

Deze studie gaat over de rol van de regionale overheid in het ontwerpen van overheidsbeleid, in het bijzonder van 'context-specifiek' regionaal innovatiebeleid, en onderzoekt op welke wijze regionale overheden ertoe doen. De studie ontwikkelt een bestuurskundig kader om deze rol te definiëren en past dit kader vervolgens toe op zes Europese regio's in Duitsland en het Verenigd Koninkrijk om deze rol empirisch te vangen. 'Context-specifiek' regionaal innovatiebeleid wordt gedefinieerd als beleid dat tot doel heeft het innovatievermogen van bedrijven te versterken door het aanpakken van specifieke 'systeemstoringen' van het regionale innovatiesysteem waarin bedrijven actief zijn.

De organisatie van de studie is als volgt: na het inleidende hoofdstuk 1, wordt het theoretisch kader van de studie gepresenteerd in hoofdstukken 2 en 3, het onderzoeksontwerp in hoofdstuk 4, een beschrijving van de case studies in hoofdstuk 5, een analyse van de case studies in hoofdstuk 6, de resultaten en conclusies in hoofdstuk 7, en hoofdstuk 8 sluit af met een reflectie.

Achtergrond van de studie

De achtergrond van deze onderzoeksinteresse ligt in de verandering van beleidsideeën die ten grondslag liggen aan het Europese regionale beleid, bekend als 'smart specialisation' of 'slimme specialisatie', dat een context-specifieke, innovatiegedreven regionaal-economische transformatie wil bevorderen. Anders dan eerdere EU-maatregelen op dit gebied die voornamelijk gericht waren op de aanbodzijde met infrastructuurgerichte maatregelen, verwijst 'slimme specialisatie' naar de rol van de regionale overheid als facilitator om dit proces van innovatiegedreven diversificatie tot stand te brengen. In samenwerking met de belangrijkste belanghebbenden op het gebied van innovatie in de regio wordt van de regionale overheid verwacht dat zij in staat is via beleidsmaatregelen 'plaatsgebonden' concurrentievoordelen te creëren. Het beleid moet gaan over endogene ontwikkeling, dat wil zeggen beginnend met wat de regio zelf te bieden heeft. Van beleidskeuzes wordt verwacht dat zij 'geïnformeerde' beleidskeuzes zijn, genomen op basis van feitelijke gegevens. De gevolgen van deze verandering in beleidsideeën voor de ontwikkeling van regionaal innovatiebeleid, maar ook voor de evaluatie ervan in termen van 'succesvol' versus 'niet succesvol' zijn verstrekkend. Het ontwikkelen van dergelijk beleid dat *innovatiegedreven* is, *contextueel*, *collectief* en *op feitelijke informatie* gebaseerd, in de EU-terminologie beleid dat 'slim' is, betreft een nieuw soort beleid en vereist een nieuwe vorm van beleidsvorming. Beide aspecten stellen hoge en ongekende eisen aan de institutionele capaciteiten van de regionale overheid.

Ondanks deze verandering in beleidsideeën die sinds het midden van de 90'er jaren steeds meer de oriëntatie van Europees regionaal beleid bepalen, zijn de onderliggende aannames over de regionale overheid als beleidsactor en de wijze waarop deze actor beleidsbeslissingen neemt echter ongewijzigd gebleven. De regionale overheid wordt nog steeds beschouwd als een rationele actor en wordt verondersteld het probleem in al zijn facetten perfect te kennen en zich bewust te zijn van alle mogelijke oplossingen. Het beleidsproces wordt nog steeds op een instrumenteel-economische manier bezien waarin problemen verondersteld worden te functioneren als leidraad voor beleidskeuzes en waarin het succes van beleid nog steeds

beoordeeld wordt op de mate waarin het beoogde doel is bereikt. Van het betrekken van belanghebbenden in de beleidsvorming en het verzamelen van gegevens over de obstakels voor innovatie in de regio wordt verondersteld dat dit een 'context-specifieke' probleemdefinitie oplevert van waaruit de beleidsoplossing quasi-automatisch uit voort rolt.

Deze zienswijze is problematisch om ten minste drie redenen. Ten eerste heb ik, op basis van persoonlijke ervaringen in het managen van Europese regionale innovatieprojecten in de tweede helft van de 90'er jaren, een ander gedrag van regionale overheidsorganisaties waargenomen, veel minder rationeel en 'automatisch' dan de theorie veronderstelt. Ik zag een duidelijke discrepantie tussen theorie (*'Soll'*) en praktijk (*'Ist'*) die niet ononderzocht kon blijven. Er is nood aan het onderzoeken in hoeverre en zo ja, op welke wijze regionale overheden ertoe doen voor het ontwerpen van 'context-specifiek' regionaal innovatiebeleid. Dit is de onderzoeksvraag van deze studie.

Ten tweede zou het openen van de 'zwarte doos van beleidsontwerp' kunnen helpen om deze mismatch te verklaren, maar dit is nog steeds een onontgonnen gebied van academisch onderzoek. In de literatuur over regionale innovatiesystemen is grote vooruitgang geboekt bij de ontwikkeling van regionale typologieën en bij het onderzoeken welke theoretische beleidsmaatregelen zinvol zijn voor welke regiotypes. Om echter te begrijpen waarom — in het ware leven — beleidsoplossingen sterk van elkaar kunnen verschillen tussen ogenschijnlijk vergelijkbare regio's, moet worden onderzocht hoe regionale overheden tot die beleidsbeslissingen zijn gekomen. Als wetenschappelijke discipline is Bestuurskunde uitgerust om de rol van de regionale overheid conceptueel te definiëren en de zwarte doos van beleidsontwerp te openen voor analyse.

In de derde plaats zijn de rationele actor aannames die aan de visie op de overheid in de regionale innovatiesysteem literatuur ten grondslag liggen – en waarop de eerder genoemde Europese regionale innovatieprojecten geïnspireerd zijn – problematisch. Deze veronderstellingen beperken de onderzoeker in het begrijpen hoe beleidsbeslissingen tot stand komen, in het kunnen vaststellen welke factoren de besluitvorming beïnvloeden, in het kunnen verklaren van beleidsvariatie tussen regio's. In plaats van te veronderstellen dat de juiste probleemdefinitie automatisch voert tot het juiste innovatiebeleid, wijzen bestuurskundigen erop dat beleid het resultaat is van interactie, niet van gegevens. Wat als 'juist innovatiebeleid' geldt, hangt af van het gekozen analytische perspectief.

Daarom ontwikkelt deze studie een bestuurskundig kader om de rol van de regionale overheid op een meer gedifferentieerde wijze te definiëren dan in de regionale innovatiesysteem literatuur gebeurt, een kader waarin naar deze rol gekeken wordt door verschillende analytische lenzen.

Onderzoeksvraag en onderzoeksmethode

De onderzoeksvraag van deze studie is: in hoeverre en zo ja, op welke wijze doen regionale overheden ertoe voor het ontwerpen van 'context-specifiek' regionaal innovatiebeleid? Het doel is bij te dragen tot een beter begrip van de regionale overheid als beleidsactor om een dergelijk beleid te ontwikkelen. De theoretische relevantie van de studie ligt in de bijdrage aan een nieuwe, gedifferentieerde conceptualisering van de rol van de regionale overheid bij de beleidsvorming, een conceptualisering die helpt beter vat te krijgen op 'context-specifiek' regionaal

innovatiebeleid. De beleidsrelevantie van de studie is gelegen in de bijdrage om regionale overheden meer bewust te maken van hun manoeuvreerruimte om regionale innovatie te bevorderen, ongeacht de formele bevoegdheden van de regio.

Om deze onderzoeksvraag te beantwoorden wordt in de studie een descriptieve, multiple-case study onderzoeksmethode gehanteerd beschreven in hoofdstuk 4. Elk van de zes case studies bestaat uit een Europese regio die in de periode 1994-1998 aan het Europese RITTS[3] programma heeft deelgenomen. RITTS, samen met het RTP/RIS-programma,[4] zijn de proefprojecten van de 'smart specialisation' strategie die ten grondslag ligt aan het huidige Europese regionale beleid. Elk RITTS-project moest een 'context-specifieke' regionale innovatiestrategie formuleren via een uit drie fasen bestaande, gestandaardiseerd proces, op basis van nieuw verzamelde regionale data, en in samenwerking met de belanghebbenden op het gebied van innovatie in de regio. De uitvoering van het overeengekomen beleid viel buiten het RITTS programma en valt ook buiten dit onderzoek. De focus van de studie is op het analyseren van het besluitvormingsproces dat leidt tot het overeengekomen beleid in elk van de zes RITTS regio's.

Om de theoretische onderzoeksvraag van de studie te vertalen naar een empirisch waarneembare waarvoor gegevens kunnen worden verzameld wordt de regionale overheid — de analyse-eenheid in deze studie — gedefinieerd als de RITTS projectleider, de regionale overheidsorganisatie die verantwoordelijk is voor het beleidsvormingsproces. Door na te gaan 'wie' bepaalt 'wat', 'wanneer', 'hoe' en zo mogelijk 'waarom'" in de drie fasen van het RITTS project ontstaat er een beeld van de rol die de regionale overheid daadwerkelijk speelt bij de beleidsontwikkeling in tegenstelling tot het afleiden van die rol op basis van formele bevoegdheden, officiële mandaten en taakbeschrijvingen. Om te achterhalen welke rol de regionale overheid daadwerkelijk speelt in het ontwerpen van 'context-specifiek' regionaal innovatiebeleid wordt in deze studie nagegaan hoe dit beleid in de praktijk tot stand komt.

Methodologische en praktische criteria hebben de selectie van de zes case studies bepaald. De aard van de regionale innovatieproblematiek en de administratieve positie van de regionale overheid binnen het nationale bestuurssysteem waren twee leidende methodologische criteria. Meer praktische criteria hadden te maken met de hoeveelheid, kwaliteit, taal en toegankelijkheid van de RITTS project protocollen en documentatie in de archieven van de Europese Commissie. Kwalitatieve gegevens zijn verzameld uit een bestaande dataset door archiefonderzoek en documentanalyse, alsook persoonlijke observaties opgedaan tijdens het managen van RITTS en RTP/RIS projecten namens de Europese Commissie in de tweede helft van de 90'er jaren.

De zes RITTS regio's die aan deze criteria voldeden en die als case studies zijn geselecteerd vertegenwoordigen drie verschillende regionale innovatiesysteemtypen – perifere, oud-industriële en grootstedelijke regio's — en zijn gevestigd in Duitsland en het Verenigd Koninkrijk, landen die federale, respectievelijk unitaire bestuurssysteemtypen vertegenwoordigen.

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[3] Regional Innovation and technology Transfer Strategies and Infrastructures (gemanaged door de Europese Commissie, DG ENTR, belast met Europees innovatiebeleid; deelname stond open voor alle regio's van de EU).

[4] Regional Technologie Plan/Regional Innovation Strategy (gemanaged door de Europese Commissie, DG REGIO, belast met Europees regionaal beleid; deelname stond open voor EU-regio's met een BBP van minder dan 75 % van het EU-gemiddelde).

Regionale Innovatie Systeemtheorie

Het RITTS programma is geïnspireerd op het concept van 'regionale innovatiesystemen', dat op zijn beurt geïnspireerd is op het concept van 'nationale innovatiesystemen'. In hoofdstuk 2 worden deze concepten toegelicht en wordt de theoretische typologie van regionale innovatieproblemen en context-specifieke beleidsantwoorden in deze studie beschreven. Deze indeling fungeert als de theoretische benchmark om te bepalen in welke mate de empirische realiteit in de zes regio's bevestigt wat de theorie voorspelt.

Uit onderzoek uitgevoerd door evolutionaire economen in de jaren tachtig en begin jaren negentig is gebleken dat de verschillen in onderzoeks- en ontwikkelingsinvesteringen slechts deels de verschillen in innovatieprestaties tussen landen konden verklaren. Omdat innovatieprocessen in toenemende mate werden beschouwd als interactieve en institutioneel gevormde processen, werd de nadruk van overheidsinterventie op marktfalen aangevuld met het aanpakken van tekortkomingen in het bredere 'innovatiesysteem'.

Deze studie hanteert de definitie van Lundvall (1992): Een 'innovatiesysteem' bestaat uit *elementen* en *relaties* die van invloed zijn op de productie, de verspreiding en het gebruik van nieuwe en economisch nuttige kennis; door deze interactie worden capaciteiten ontwikkeld die bepalend zijn voor de innovatieprestaties van het systeem in zijn geheel. 'Systeemstoringen' kunnen zich voordoen in de institutionele samenstelling van de elementen van het systeem (met inbegrip van ontbrekende elementen) en in de kwaliteit van de relaties tussen deze elementen (met inbegrip van ontbrekende verbindingen).

Begin jaren negentig hebben regionaal geografen 'innovatie' in verband gebracht met 'nabijheid', en hebben innovatieprocessen voorgesteld als sociaal ingebedde leerprocessen tussen innovatie-relevante actoren; processen die niet contextloos zijn, maar juist territoriaal gebonden vanwege de specifieke aard van kennis. De verschillen in innovatieprestaties tussen regio's overtroffen de verschillen tussen landen, en deden dat ook over een langere tijdsperiode bezien, wat wees op krachtige institutionele factoren op regionaal niveau waar tot nu toe weinig onderzoek naar was verricht. Met de definitie van 'instituties' zowel formele organisaties omvattend als alle regels die gedrag van actoren beïnvloeden, lijken deze factoren het succes te verklaren van hoog innovatieve regio's zoals Baden-Württemberg, Lombardije, Rhône-Alpes, en Catalonië in Europa, en Silicon Valley en de Greater Boston Area in de Verenigde Staten.

Deze studie hanteert de definitie van Autio (1998): Een 'regionaal innovatiesysteem' bestaat uit twee sub-systemen ingebed zijn in een gemeenschappelijke regionale, sociaal-economische en culturele context. Schematisch voorgesteld betreffen deze: (1) een sub-systeem van toepassing en gebruik van kennis, bestaande uit ondernemingen in hun functie van 'kennisgebruiker', organisaties die een *vraag naar kennis* hebben; en (2) een sub-systeem van creatie en verspreiding van kennis, bestaande uit 'kennisverstrekkers', organisaties die *kennis aanbieden*, zoals universiteiten en onderzoeksinstellingen, maar ook organisaties voor technologieoverdracht en andere intermediairs. Binnen en tussen deze sub-systemen kunnen systeemgebreken optreden. Het RITTS programma was bedoeld om regionale overheden te helpen bij het opsporen en aanpakken van dergelijke regionale innovatiesysteemgebreken. Het startpunt van elk RITTS project was het verzamelen van regionale data in fase 1 om een 'vraag' en 'aanbod' analyse te ondernemen geënt op deze twee sub-systemen.

In navolging van de Tödtling & Trippl (2005) typologie worden in deze studie drie belangrijke tekortkomingen in een regionaal innovatiesysteem onderscheiden (ook wel 'regionale innovatieproblematiek' genoemd om de geïnterrelateerde aard van regionale innovatieproblemen te benadrukken). Het betreft 'organisatorische dunheid' wat refereert aan een gebrek aan institutionele elementen; 'lock-in' wat verwijst naar elementen en relaties die verouderd zijn; en 'fragmentatie' wat refereert aan ontbrekende relaties binnen en tussen sub-systemen. Elk van deze drie systeemtekortkomingen wordt beschouwd als de dominante innovatieproblematiek in een bepaald regio-type, ondanks het feit dat elke regio in de praktijk geconfronteerd kan worden met een combinatie van tekortkomingen. In navolging van Tödtling & Trippl in hun ideaal-typische benadering van de werkelijkheid worden innovatie systeemstoringen in perifere regio's eerst en vooral gezien in termen van 'organisatorische dunheid'; oud-industriële regio's in termen van 'lock-in'; en grootstedelijke gebieden in termen van 'fragmentatie'. Voor de verschillende typen van regionale innovatiesystemen die te maken hebben met verschillende soorten systeemtekortkomingen stellen zij een 'context-specifieke' beleidsmix van maatregelen voor om 'organisatorische dunheid', 'lock-in' en 'fragmentatie' aan te pakken.

De Tödtling & Trippl typologie van regionale innovatieproblemen en hun 'context-specifieke' beleidsmaatregelen wordt gebruikt als theoretische benchmark waarmee de zes RITTS regio's wordt vergeleken. In hoofdstuk 5 wordt 'pattern matching' toegepast om vast te stellen in hoeverre het waargenomen patroon — wat betreft de probleemomschrijving in fase 1 van het RITTS project en de overeengekomen beleidsmaatregelen aan het einde van het RITTS project in fase 3 — overeenstemt met het theoretisch voorspelde patroon. Het doel van 'pattern matching' is om na te gaan of de hypothese van gecontextualiseerde beleidsvorming uit de Regionale Innovatie Systeemtheorie bevestigd wordt, dat wil zeggen of regio's met een soortgelijke innovatieproblematiek een soortgelijk regionaal innovatiebeleid ontwerpen.

De resultaten van deze 'pattern matching' worden beschreven aan het einde van hoofdstuk 5. Daaruit blijkt ten eerste dat de diagnose van de innovatieproblematiek in fase 1 in alle zes regio's zeer dicht en in sommige gevallen identiek is aan wat de theorie voorspelt voor dat specifieke innovatiesysteemtype. En dit ondanks de verschillende onderzoeksteams die werden ingehuurd en de verschillende onderzoeksmethoden die werden gebruikt om regionale data te verzamelen en te analyseren. De conclusie is dat de empirisch vastgestelde probleemdefinitie in alle zes case studies nauw aansluit bij de theoretisch voorspelde probleemdefinitie.

Echter, ten tweede genereren soortgelijke probleemdefinities een verscheidenheid aan beleid die niet zo logisch en automatisch uit de probleemdefinitie lijkt te rollen als de theorie voorspelt. In alle zes de regio's komt de uiteindelijke beleidsmix van maatregelen slechts ten dele, zo al het geval is, overeen met wat theorie voorspelt. Anders gezegd, er is een mismatch tussen de empirisch vastgestelde en de theoretisch voorspelde beleidsreactie. De conclusie is dat het hebben van een regio-specifieke probleemdefinitie niet noodzakelijkerwijs leidt tot een regionaal innovatiebeleid als 'context-specifiek' als theoretisch voorspeld. Regio's met soortgelijke innovatieproblemen hoeven geenszins soortgelijke beleidsoplossingen voor te stellen. Kennelijk gebeurt er iets tussen het vaststellen van de probleemdefinitie aan het begin van het beleidsproces en het overeenkomen van het definitieve beleid op het einde wat niet kan worden verklaard in het rationele actor model. Om inzicht te krijgen in wat er precies gebeurt, moet het

beleidsproces worden geopend om te analyseren hoe besluiten in elk van de zes regio's tot stand zijn gekomen en welke rol regionale overheden hebben gespeeld bij het nemen van dergelijke besluiten. Om dit te kunnen doen, stelt de studie een bestuurskundig analysekader voor, uiteengezet in hoofdstuk 3.

Bestuurskundig analysekader

Om de rol van de regionale overheid in een regionaal innovatiesysteem conceptueel te definiëren wordt in hoofdstuk 3 eerst aangegeven wat het doel of de functie van een regionale overheid is binnen een bestuurssysteem. Ongeacht de mate van regionale autonomie, worden in de bestuurskunde literatuur vier hoofdfuncties van een regionale overheid onderscheiden. Deze studie volgt de classificatie van Toonen et al. (1998).

Een eerste functie van de regionale overheid is zijnde de geïnstitutionaliseerde uitdrukking van de regio als 'gemeenschap'. Voor velen is dit de meest klassieke functie. Met name in de 'Zuid-Europese familie van staten' zoals Italië, Spanje en Portugal wordt de regionale overheid in de eerste plaats gezien als de democratische vertegenwoordiging van de gemeenschap en belangenbehartiger van de voorkeuren van die gemeenschap.

Een tweede functie van de regionale overheid is burgers te voorzien van publieke goederen en diensten, zoals stadsplanning en ruimtelijke ordening, infrastructuurplanning, milieu-bescherming, economische ontwikkeling, nutsvoorzieningen en dergelijke. In de typologie van staten tradities wordt de regionale overheid in de 'Angelsaksische familie van staten' eerst en vooral in haar functie van 'openbare dienstverlener' gezien, waarbij het Verenigd Koninkrijk het belangrijkste voorbeeld van deze staten familie is.

Een derde functie van de regionale overheid is zijnde een 'politiek-administratieve eenheid' voor een bepaald grondgebied, als op zichzelf staande eenheid en met betrekking tot andere bestuurslagen, onderdeel van een breder, meerlagig overheidsstelsel. De regionale overheid wordt gezien vanuit het oogpunt van territoriale verdeling van macht en territoriale afbakening van bevoegdheden tussen de verschillende bestuurslagen. Dit gezichtspunt van de regionale overheid komt overeen met de 'Continentaal-Europese familie van staten' dat landen als Oostenrijk, Duitsland en Frankrijk, maar ook Nederland omvat.

Een vierde functie van regionale overheden, tenslotte, heeft betrekking op het vermogen van de overheid om met veranderingen om te gaan. Verandering kan daarbij geïnterpreteerd worden als 'crisis', waarbij de overheid een 'laatste redmiddel' is, de enige organisatie 'nog steeds staand', beheerser van de crisis en waarborger van de bedrijfscontinuïteit. Het managen van veranderingen kan ook betrekking hebben op een gepland, doelbewust transformatieproces waarbij de overheid de 'architect van verandering' is. Deze laatste definitie is zeer vergelijkbaar met wat de EU in gedachten heeft met de rol van de regionale overheid in haar agenda voor 'smart specialisation'.

Hoe goed de regionale overheid in de uitvoering van deze functies slaagt, wordt in deze studie beoordeeld aan de hand van de classificatie van Toonen et al. (1998) en Toonen (2015). De vier niveaus van besturen ('governance') vertegenwoordigen verschillende administratieve waarden van beleid ontwerpen. Deze studie volgt de definitie van Hood (1991), met een eigen wijziging om een vierde administratieve waarde in te sluiten. Hoewel deze administratieve waarden elkaar

niet uitsluiten, wordt voor het doel van deze studie elk bestuursniveau met één dominante administratieve waarde geassocieerd. Bij het ontwerpen van beleid komen deze verschillende administratieve waarden met elkaar in contact en staan in wisselwerking; deze waarden kunnen elkaar aanvullen maar ook in tegenstrijd zijn met elkaar. De vier bestuursniveaus waarop de functies van de regionale overheid kunnen worden uitgevoerd en de bijbehorende administratieve waarden waartegen de regionale overheid kan worden beoordeeld, zijn:

1) operationeel niveau, dat betrekking heeft op 'responsiviteit' op regionale problemen en maatschappelijke behoeften; de overheid is effectief in het oplossen van problemen en efficiënt in het gebruik van (schaarse) middelen;

2) procedureel niveau, dat betrekking heeft op de 'legitimiteit' waarmee de overheid opereert; de regionale overheid wordt beschouwd als eerlijk, onpartijdig, democratisch, transparant en legitiem;

3) constitutioneel niveau, dat betrekking heeft op 'veerkracht en 'weerbaarheid'; de regionale overheid creëert de juiste voorwaarden om te ageren en haar acties hebben impact, de regionale overheid zorgt voor 'overleving';

4) contextueel niveau, waarbij het gaat om 'congruentie'; de regionale overheid is in staat om haar acties in de juiste context te plaatsen naar 'tijd en plaats' *('zo doen we dat hier')* en haar acties hebben weerklank.

In hoofdstuk 3 worden de vier functies vertaald naar het ontwerpen van 'context-specifiek' regionaal innovatiebeleid op basis van een regionaal innovatiesysteem gedachte. Deze functies worden in deze studie als volgt geherdefinieerd:

Een eerste functie van de regionale overheid is het vertegenwoordigen van de regionale gemeenschap en de vaststelling van het 'regionale innovatiebelang'. Een tweede functie van de regionale overheid is het aanbieden van openbare diensten en het vaststellen van overheidsbeleid om het regionale innovatiesysteem te helpen innovaties te ontwikkelen, te verspreiden en te gebruiken. Een derde functie van de regionale overheid is het positioneren van de regio in grotere, meerlaagse overheidsstelsels en andere sectorale, nationale en mondiale innovatiesystemen. En een vierde functie van de regionale overheid is om in het regionale innovatiesysteem op te treden als een 'verander actor', een 'agent of change' of om innovatie toe te passen als coping mechanisme om met veranderingen gedreven door een globaliserende wereld om te kunnen gaan.

Het combineren van deze vier functies van regionale overheden (*'wat'*) met de vier 'governance' niveaus waar de uitvoering van deze functies kan plaatsvinden en beoordeeld kan worden (*'hoe'*) resulteert in zestien theoretische rolmogelijkheden voor regionale overheden in het ontwerpen van beleid. Deze 4x4-matrix dient als het bestuurskundige analysekader voor de empirische case studies en wordt hieronder in tabelvorm gepresenteerd.

De analyse van het beleidsvormingsproces in elk van de zes case studies wordt uitgevoerd in hoofdstuk 6 aan de hand van dit bestuurskundig kader. De vier bestuursniveaus ('governance levels') worden in hoofdstuk 4 geoperationaliseerd in verschillende analytische dimensies, aangeduid als 'indicatoren'. In totaal worden vijftien indicatoren gebruikt om de analyse van de case studies in hoofdstuk 6 te structureren. De analyse heeft tot doel na te gaan welke rol de regionale overheid daadwerkelijk heeft vervuld in het beleidsvormingsproces om erin te slagen een 'context-specifiek' regionaal innovatiebeleid te ontwikkelen.

Bestuurskundig kader voor de analyse van de rol van de regionale overheid in het ontwerpen van regionaal innovatiebeleid				
Bestuursniveaus ('governance'):	**Functies van de regionale overheid:**			
	Belichaamt de regionale gemeenschap	Levert openbare diensten en overheidsbeleid	Is een zelfstandige eenheid in een groter, meerlaags systeem	Gaat om met en creëert zelf verandering
Operationeel	*'gemeenschaps-gedreven organisator'*	*'responsieve probleem-oplosser'*	*'relatie-makelaar'*	*'verander-manager'*
Procedureel	*'innovatie gemeenschaps-bouwer'*	*'oplossings-facilitator'*	*'pro-actieve netwerker'*	*'verander-voorwaarden-schepper*
Constitutioneel	*'regionale belangen-behartiger'*	*'innovatiesysteem-beheerder'*	*'competente co-producer'*	*'innovatie visionair'*
Contextueel	*'regionaal-historische verbindingsschakel'*	*'eigen-regio-eerst' leverancier'*	*'regionale machtsbouwer'*	*'regionale futurist'*

Resultaten en conclusies

De resultaten van het onderzoek zoals die uit de analyse van de case studies in hoofdstuk 6 naar voren zijn gekomen worden gepresenteerd in hoofdstuk 7 en zijn als volgt. Uit de zes case studies blijkt een *grote verscheidenheid* aan rollen van de regionale overheid te bestaan. De verscheidenheid heeft zowel betrekking op de functies van de regionale overheid als op het bestuursniveau waarop deze functies zijn uitgevoerd. Ten tweede nemen alle regionale overheden *meerdere rollen* aan gedurende het beleidsproces om hun 'context-specifiek' regionaal innovatiebeleid te ontwerpen; deze rollen werden tegelijkertijd en afwisselend gespeeld. Ten derde vertoonde elk van de zes regio's *één dominante rol* die werd ondersteund of aangevuld met een of meer andere rollen. Met 31 rollen in totaal voor alle zes case studies, die 15 van de 16 theoretische rolmogelijkheden afdekken, en variërend van 3 tot 9 rollen per regio (gemiddeld 5 rollen per regio), wordt in deze studie geconcludeerd dat de empirische verscheidenheid veel groter is dan de theorie veronderstelt.

De rol van 'responsieve probleem oplosser' en de rol van 'relatie-makelaar', die twee verschillende overheidsfuncties vertegenwoordigen op het operationele bestuursniveau, zijn de meest voorkomende rollen in de case studies. Vier van de zes regio's vertoonden deze rollen, zij het in verschillende mate van importantie (in slechts twee van deze vier regio's waren zij de dominante rol). Het vinden van deze twee rollen is niet geheel onverwacht, aangezien de management insteek van een RITTS project de regionale overheden in deze richting duwde om de innovatieproblemen van de regio aan te pakken (van de projectleider werd verwacht als een

'responsieve problem oplosser' op te treden) door middel van een consensusvormingsproces tussen de voornaamste belanghebbenden in de regio (van de projectleider werd verwacht als 'relatie-makelaar' te fungeren). Desalniettemin zijn dit de twee hoofdrollen die worden beschreven in de regionale innovatiesysteem literatuur over hoe de regionale overheid ertoe doet bij het ontwerpen van 'context-specifiek' regionaal innovatiebeleid. En deze rollen werden aangetoond in deze studie. Echter, andere *niet* in deze literatuur gevangen rollen deden er ook toe en waren in vier van de zes regio's zelfs van groter belang.

Op de tweede plaats staat de rol van 'oplossings-facilitator', uitgevoerd op het procedurele niveau, die werd aangetroffen in drie van de zes regio's. De derde plaats wordt ingenomen door 8 verschillende rollen, die zowel op het operationele, procedurele als het contextuele bestuursniveaus plaatsvonden, waarbij elke rol steeds in twee van de zes regio's werd aangetroffen. Op de vierde en laatste plaats gaat het om 3 verschillende rollen die telkens in één van de zes regio's werden aangetroffen. De enige rol die in geen van de zes case studies werd aangetroffen, was die van 'regionale machtsbouwer'. Het is de rol die de regio voorbereidt op een substantiële toename in regionale autonomie en uiteindelijk leidt tot het uitroepen van de regionale onafhankelijkheid.

Het bestuursniveau waarop de regionale overheden het meest werkzaam waren in het beleidsvormingsproces was het operationele 'governance' niveau. Van de 31 rollen die in totaal voor alle zes case studies zijn vastgesteld, zijn er 11 uitgevoerd op het operationele niveau, ten opzichte van 9 op procedurele niveau, 8 op het constitutionele niveau en 3 op het contextuele niveau.

De meerdere rollen die alle regionale overheden uitoefenden in het beleidsproces om hun 'context-specifiek' regionaal innovatiebeleid te ontwikkelen, behoorden tot verschillende bestuursniveaus. Twee van de zes regio's ageerde in het beleidsproces op 2 verschillende 'governance levels'; drie van de zes regio's combineerde 3 bestuursniveaus, en één regio ageerde op alle 4 de bestuursniveaus.

De dominante rol van waaruit regionale overheden het beleidsvormingsproces benaderden kon op elk van de vier bestuursniveaus liggen, maar het procedurele niveau werd niet gevonden in de zes case studies. Twee van de zes regio's hebben het beleidsproces benaderd vanuit het operationele niveau, twee vanuit het constitutionele en twee vanuit het contextuele bestuursniveau. Welke rol de dominante rol werd, leek nauw samen te hangen met de regio-specifieke motivatie om aan het RITTS programma deel te nemen. Daar elk bestuursniveau verschillende administratieve waarden vertegenwoordigd, was de opvatting van wat als een succesvol eindresultaat van het RITTS project kon worden beschouwd — een 'context-specifiek' regionaal innovatiebeleid — per regio verschillend. Het kon daarbij gaan om 'responsiviteit' op regionale problemen, 'veerkracht' en 'weerbaarheid' bij het omgaan met veranderingen en het genereren van impact, als om 'congruentie' bij het ontwerpen van beleidsmaatregelen aangepast aan de 'huidige tijd' en rechtdoend aan de 'specifiekheid' van de regio.

Op basis van het zoeken naar patronen wordt in de studie geconstateerd dat de verscheidenheid aan rollen bestaat ongeacht de dominante regionale innovatieproblematiek of het type van regionale overheidsorganisatie die belast is met het ontwerpen van beleid (territoriaal, algemene belang versus functioneel, één missie). Geen van beide variabelen leek te corresponderen met

specifieke rollen van de regionale overheid; beide variabelen konden gelinkt worden aan elk van de gevonden rollen.

Een sterker patroon leek waarneembaar bij het hergroeperen van de regio's naar type bestuurssysteem (federale versus eenheidsstaat), hoewel het kleine aantal regio's (n=6) tot voorzichtigheid maant. Alle drie de Duitse regio's vertoonden rollen die tot twee overheidsfuncties behoren: die van 'openbare dienstverlener' gevolgd door 'deel uitmakend van een groter, meerlaags systeem'. Deze functies werden op alle bestuursniveaus uitgevoerd, met uitzondering van het contextuele niveau. Geen enkele van de Duitse regio's oefende de 'omgaan met verandering' functie uit. De Britse regio's vertoonden een meer gevarieerd samenstel van rollen in alle vier de overheidsfuncties en op alle vier de bestuursniveaus, hoewel twee van de drie Britse regio's juist die rollen vertoonden die tot de twee andere overheidsfuncties behoren: 'het vertegenwoordigen van de regionale gemeenschap' en 'het omgaan met en zelf creëren van verandering'. De resultaten van deze zoektocht naar patronen verschillen voor beide reeksen regio's van wat er verwacht zou mogen worden op basis van de indeling naar nationale families van staten tradities eerder vermeld. In hoeverre dit 'landen effect' wijst op een patroon of een willekeurige bevinding is, valt buiten het bereik van deze studie en vereist aanvullend onderzoek in meer regio's.

Om te begrijpen hoe 'context-specifiek' regionaal innovatiebeleid tot stand komt, moet de rol van de regionale overheid worden gedifferentieerd. Dit is de algemene conclusie van deze studie. Een gedifferentieerde conceptualisering van de rol van de regionale overheid maakt het mogelijk om de *verscheidenheid aan rollen* die de regionale overheid in de beleidspraktijk aanneemt om een dergelijk beleid te ontwerpen empirisch te vangen evenals de verscheidenheid aan rollen *tussen regionale overheden*.

Een gedifferentieerde conceptualisering van de rol van de regionale overheid maakt het ook mogelijk om de verschillende bestuursniveaus, de 'governance levels', waarop deze rollen ten uitvoer worden gelegd empirisch te vangen, en de *verschillende administratieve waarden* van het beleidsontwerp aan te tonen. De wisselwerking tussen deze verschillende en niet noodzakelijkerwijs aanvullende administratieve waarden maakt van het beleidsproces een veeleisend en tijds/plaats-specifiek proces.

Ten slotte gaf de toepassing van deze gedifferentieerde conceptualisering op de analyse van zes beleidsontwerpprocessen een indicatie dat er zoiets is als een 'contextuele' variabele die de beleidsvorming beïnvloedde en die collectieve actie op regionaal niveau leek in te kaderen. Regio's met soortgelijke innovatieproblemen lieten geen soortgelijke beleidsoplossingen zien. Het verklaren van beleidsvariaties tussen regio's op basis van deze variabele is echter buiten het bereik van deze beschrijvende studie en vereist verder onderzoek.

Wat dit onderzoek betreft heeft het aanvullende inzichten opgeleverd over 'context-specifiek' regionaal innovatiebeleid en heeft het bijgedragen tot een beter begrip – zowel conceptueel, analytisch als empirisch – van de rol van de regionale overheid als beleidsactor om een dergelijk beleid te ontwikkelen.

B

Biography

Fabienne Bettina Johanna Andrea Corvers was born in Maastricht, the Netherlands, on January 27th, 1968. She grew up in Bemelen and attended grammar school at the Jeanne d'Arc College in nearby Maastricht.

From 1986-1992, she studied Public Administration at Leiden University and did her economic specialisation at Erasmus University Rotterdam. Belonging to the top 5% of her academic year, she was among the first students of her Faculty selected for the European Erasmus programme to study abroad. During Michaelmas term 1990, she took classes in Government and Geography at the London School of Economics and Political Science.

In 1992, having obtained her Master's degree in Public Administration from Leiden University, she started working as a researcher at the Maastricht Economic Research Institute on Innovation and Technology (known as MERIT, since 2005 part of the United Nations University). In the years following, up to 2001, she undertook policy-driven research on the role of innovation in regional economic development and its implications for government intervention, employing different data collection methods and participating in national and international research teams.

From 1994-1999, she was seconded to the European Commission as an external expert reinforcing the technical assistance unit at DG Enterprise. Besides managing RITTS and RTP/RIS projects, she helped develop the Community Innovation Survey together with Eurostat, supervised studies in the framework of the European Innovation Monitoring System, and organised community-building activities bringing regional innovation scholars and policy-makers together.

In 2001, having passed the organisation's entrance exam, she left MERIT to join the European Commission at DG Research. From 2001-2015, she worked as a policy analyst developing European science, technology and innovation indicators, performing indicator-driven policy analyses, drafting evidence-based policy reports, undertaking ex-ante impact assessments and ex-post evaluations, providing methodological guidance and contributing to European strategy development.

In 2015, she moved to the Secretary-General, the European Commission's central coordinating entity, to support evidence-based policy-making in the organisation at large. At the central Evaluation and Impact Assessment unit she was appointed Senior Expert to oversee the roll-out of the Better Regulation agenda and the realisation of its principles in the European Commission departments.

In the past, Fabienne has been invited as keynote speaker at numerous national and international conferences, and has published articles as author and co-author in international academic journals, paper and book series. She has taught classes as invited guest lecturer at Maastricht University, the Maastricht Graduate School of Governance, the European Institute of Public Administration, the United Nations University, the University of Warwick, and the London School of Economics and Political Science.

Prior to taking up residence in Belgium with her husband and daughter, Fabienne lived in the Netherlands, the United Kingdom and Luxembourg.