Regional Innovation Systems: Policy and Application in a Swedish context

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KARLSSON, ISAAC (2012). REGIONAL INNOVATION SYSTEMS: POLICY AND APPLICATION IN A SWEDISH CONTEXT. Uneven economic development has been an issue of interest for a long time. Recently focus has shifted from inequalities between countries to growing inequalities within countries. With the EU as one of the most prominent supporters, regional innovation systems have become a centerpiece in the battle against uneven development. This paper examines how these strategies and policies are transferred through the governance hierarchy from the supranational level to the periphery of small Swedish municipalities. The paper also examines how these strategies, influenced by theories and empirical evidence from successful innovative regions, are conceptualized and implemented in a Swedish context. Analysis of policy documents and interviews with regional and municipal actors have been the basis of the empirical material. The criteria for selecting cases to study are proximity to a university, and key economic variables for the municipalities. The analysis indicated that there seems to be a somewhat significant policy transfer effect into the strategies of the Swedish regions, but this does not necessarily reach the municipal level. There also seems to be a gap between the transfer of the strategies to their implementation, mainly caused by ambiguities in the structure of the system, in part stemming from an absence of a national plan on innovative regional systems.

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PREFACE. When first entering into the masters program in Urban and Regional Planning at Stockholm University, I felt that this science was somewhat out of my reach. I have always had a genuine interest in both economics and geography, and after finishing my bachelors in economics I was hoping to integrate this knowledge with something closer to my interest of geography. Ever since I have been searching for an interface of these two disciplines. This master thesis is therefore at this intersection of these fields. At first I did have a general picture of what was to be the topic of the thesis, economic development had been a sub-discipline of interest during my bachelors programme. Therefore I started to look into theories and models, which I felt most comfortable with, in this case these where within endogenous growth theories. When integrating the ideas of endogenous growth and development into the discipline of urban and regional planning, new regionalism theories with its connections to both regional development and economic geography seemed a perfect fit. As the process of narrowing the focus of the study went on, the concept and theories of regional innovation systems seemed to have both the advantage of being broad, and encompassing many interesting aspects, while at the same time narrow enough to use as a framework for the thesis. The following paper is the final product of this endeavor.
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1. Introduction and General Aim
Economic growth and development has been an interest of many scholars and academics for centuries. Not least have issues of uneven development been highlighted—not only in economics, but also by academics from numerous fields. Although in recent years, notions like ‘third world countries’ and similar categorizations of countries’ economic development, are no longer in fashion, inequalities still exist and roam free. Many academics point out that with continuously increasing globalization, many previously lagging countries are expanding their economic development and consistently show nearly incredible growth statistics. However inequalities persist, although some of the focus has shifted from inequalities between countries to growing inequalities within countries. These regional or local inequalities are most visible when looking at the increasing importance of metropolitan regions as growth engines, many times skewing the growth figures for entire countries.

As a result of these processes resurgence has occurred in the field of regional geography and regional planning. What has been termed “new regionalism” has emerged with an integrative approach that ties together the local with the global, micro with macro, as well exogenous with endogenous developments in a wide array of regional scales (Soja 2009). Soja describes three main episodes of regional planning and development leading up to the “new regionalism”, which is still in its infancy. These development stages are described as: first, the resource-development stages in the first half of the 20th century; second, came welfare regionalism, lasting up until about the 1980s, and lastly, the third, today’s entrepreneurial regionalism (Soja 2009).

The first regional planning stage came about as a response to the growing decline in industrial city environments. The increasing population density, unhealthy slum housing, was seen as the major cause of both social and environmental problems. As a reaction to this, regional planning and development came to be defined in almost an ecological sense, and social cohesion was presumed to be determined largely by the physical environment. (Soja 2009)

As World War II came to an end, regional planning and development had mostly disappeared from the limelight. In the 1950’s a very different type of regional planning stage started to take shape. Coinciding with the large economic growth in nearly all industrialized countries, as a national economic plan, the welfare state started to appear. The main agenda behind this project was to maintain administrative efficiency and economic growth, while at the same time deal with the growing problem of uneven development and economic inequality. Although rarely explicitly stated the focus of regional planning and analysis, it came to deal with these issues of uneven development. These strategies most often were in the form of active stimulation efforts for new development in poorer regions. (Soja 2009)

The third development stage was initially triggered by the urban uprisings in the 1960s and the economic recession of the 1970s. These processes shifted the focus of regional
planning and development from the previous welfare-regionalism to what was thought of more urgent issues. Uneven development and economic inequality issues became less pressing when the economy as a whole was in decline. Instead restoring the economic growth in general became the focal point for policy. This had as a result transformed the nationally comprehensive regional planning into a much more geographically fragmented and competitive entrepreneurial regionalism. In this stage regional governments must compete for the corporate investments and resources. As the national government reduced its influence in regional planning, the regional and municipal governance expanded their influence and power within these issues. Public-private partnerships became one of many tools shaping these localized strategies. (Soja 2009)

In the case of Sweden, the turn from welfare to entrepreneurial regionalism was quite evident. National programs for reducing regional and local inequalities were virtually cut off. Until the 1980s Swedish law actually prevented municipalities from engaging in economic development policies. However with the economic and industrial crisis of the 1970s, the central state was no longer capable of assisting declining industrial cities and regions. A more decentralized approach was taken, where in essence each municipality were to fend for themselves in the increasingly competitive global environment (Nilsson 2011)

At the same time as these developments in regional thinking and theorizing occurred, a parallel development in economic development and growth debates took place. As many formerly prosperous areas de-industrialized, new agglomerations and clusters of firms seemed to create new opportunities for growth. The effect of these processes was a new direction in the theorization of growth and development. Endogenous growth theories started to play a central role. Garofoli (2009) defines endogenous growth models as guaranteeing autonomy in the process of transformation of local economic systems, generally assuming traits of self-sustaining processes of development. The process is as such, based on local specificities and on the capacity to govern fundamental variables (Garofoli 2009). Empirical evidence supports the notion that the most fundamental of these variables are knowledge and innovation (Goddard and Vallance 2010). Soja, for example, writes that successful regional development depends on the formation of environments that are conducive to creating innovative thinking and learning (Soja 2009).

A theoretical framework that especially takes these ideas of knowledge and innovation into the regional development and planning perspective is the “Innovation Systems Approach”. An innovation system, disregarding geographical scale, has been defined by Sternberg as: “a system of innovation comprised of all determinants of the innovation process that is, economical, social, political, organizational, institutional, and other factors that influence the development, diffusion, and use of innovations (Sternberg 2009 page 483)”. Although encompassing a wide variety of actors within these innovation systems, most scholars place universities and higher knowledge institutions as a key component of these systems (Goddard and Vallance 2010; Doloreux 2002). Despite the large attention given lately to innovation system studies, there are still some rather unexplored territories within this framework; most notably perhaps is the focus on successful, metropolitan regions, leaving peripheral or declining economies largely
unexplored within this framework (Doloreux 2002; Doloreux and Parto 2005). Yet another potential criticism to this framework is that the policy context, also put forth as a key component, has been largely overlooked, while focus has been mainly on the interaction of firms (Doloreux 2002; Doloreux and Parto 2005).

The forces of globalization, as well as the academic debate within this field, have put new pressures on policy makers in regions. Since much of the theorizing has been focused on successful regions, a “one-size fits all” policy has to some extent been implemented across the globe, imitating success stories like Silicon Valley. However, lately these policies have been called into question, and more focus has been sought on the specific regional context. Meaning each region and its own context specific advantages, needs to be in the forefront of policy (Asheim et.al 2012a). However not only the theorizing of innovation systems has been focused largely on the private sector, i.e. private companies or firms, but to the same, or perhaps to an even greater extent, the empirical research has shared the same focus. The empirical work has also been very much over represented by so-called success stories, such as Silicon Valley, Emiglio Romagna, and Baden-Würtemburgh (Asheim et.al. 2012b). Thus there is somewhat of a gap in the previous work of regional innovation systems (RIS), and this gap is, to some extent, what this study seeks to address (c.f. Doloreux 2002; Doloreux and Parto 2005).

Another important aspect to consider in this context is the planning system. The regional level of governance seems to have become increasingly important. As EU-policies to a large extent focus on economic integration, these policies have a trickle down effect to national, regional and sub-regional levels of governance. The European Union, by some described as a Europe of regions, has perhaps been the most important organization for active promotion of regional planning, and regional innovation policy initiatives (Soja 2009). The European green paper from 1995 stated that the region was the most appropriate level for innovative supportive policies. These policies were intended to primarily improve the interaction between knowledge infrastructure, private companies, and institutions (Doloreux 2002). The Lisbon Strategy from 2000 made the connections with the regional innovation systems-framework even more apparent. The strategy was heavily weighted towards research and innovation to sustain economic growth in the EU-area, and especially toward stimulating innovative enterprises and encouraging relationships within regional innovative networks (Werker 2006). More recently the European Economic and Social Committee set out a flagship initiative, as part of the Europe 2020 strategy, the “Innovative Union”. Within this initiative, regions are once again said to play the central role as the institutional partner for universities, other research and education institutions, and firms, as these are the key actors for promoting the innovative process (European Commission 2010).

However, the power distribution between the levels of governance are very different in different countries. For example the regional level in some countries has been powerful policy actors for a long time, and thus seems to avoid some of the problems related to the integration of regional innovation and growth policies. However other countries, amongst which we find the Nordic countries including Sweden, have traditionally had a power distribution leaning towards the sub-regional level, e.g. municipalities. Thus in
this context there might also be added difficulties in implementing regional policies, such as growth and innovation strategies and plans (Harmaakorpi 2004).

As mentioned above, there are some gaps in the empirical work within this RIS framework. The context of the peripheral, or lagging region, and the lacking attention of the policy aspect are perhaps those most articulated in the literature. This study therefore aims to bring focus into these aspects and contribute new interesting insights to the debate. The general aim of this paper thus is to examine how Swedish regions and municipalities conceptualize, integrate and implement strategies and policies, that relate either explicitly or implicitly to a regional innovation systems framework. After a more detailed theoretical discussion, the in-depth research aims are presented below in section three.
2. Theoretical Background

As explained above in the introduction, there are two main parallel theoretical developments that have lead to the construction of Regional Innovation Systems (RIS) as the primary theoretical framework of this paper. The choice of the RIS framework is mainly due to its capacity to include numerous theories into one integrated framework. Since the EU is also promoting this framework as a strategic policy tool, examining the policy aspects within this framework seems highly relevant. The two theoretical developments contributing to this choice are (1) the “new regionalism” that mainly discusses the conceptualization of the region as a highly relevant object of study. New Regionalism developed as a reaction to the view that geography and space was losing importance in an ever-increasing globalized world where ICT and other technologies diminished the barriers of distance. The second (2) theoretical development is based in economics, and more specifically economic growth theory, where earlier models and theories seemed to be missing important aspects of the actual causes of growth. The technological and innovation aspect has long been considered as a crucial element to most growth theories, however many of the most prominent of these models such as the Harrod-Domar- (Harrod 1939; Domar 1946) and the Solow-model (Solow 1956), leaves these aspects exogenous to the models. The exogenous character of perhaps the most crucial element for sustained growth led to the development of endogenous growth theories. These two theoretical developments and the RIS framework are discussed in more detail in the following sections.

2.1. New Regionalism

According to Paasi (2009), one of the fundamental questions of traditional regional geography was whether regions actually exist. Paasi questions if the region is a visible reality or if it is merely a mental picture used by geographers to classify the real world. The answer to this question was essentially the reason why regionalism was proclaimed dead in the 1960s, and later the reason for the development of what is referred to as new regionalism. Traditional regionalism is largely based on the concept of bounded regions, thus regions have either natural or other boundaries. Traditional regional geography is concerned mainly with the real, visible boundaries of the world, and the description of those. As Ronald Abler writes in response to the discussion of the decline of traditional regional geography; “For a long time, geographers tended to believe that internally homogenous regions, based on one or a number of place characteristics, existed independently of the principles which define them, and that regions themselves were intrinsically worthy of delimitation and study (Abler et. al 1971:p 72)”(Paasi 2009). As this statement exemplifies, traditional regionalism became more and more criticized for having only descriptive attributes.

In the wake of these criticisms, and as a response to them, new theorizing about the region developed. New regional geographers are no longer searching for visible characteristics to define regions, and describing them. Instead the region as a space is seen as an ever changing social construct, a process in which people in their daily life, produce and reproduce the regions through politics, economics, education, media, etc.
(Paasi 2009). Castells (1996) discusses these changes as the world has gone from a space of places, to a space of flows, where transactions and exchanges can be made almost instantly across the globe. There are however, transactions and exchanges that for one reason or another do not spread instantaneously across space; some are instead highly sensitive to distance. These activities might need to be built on the trust and common institutional framework that can only be developed by face-to-face contacts and the common milieus of geographical proximity. In this sense, the region has come forth as the most reasonable level in which these processes can function properly (Asheim et.al. 2012(b); Harmaakorpi 2004). More specifically, as conceptualized in this study, these processes do not tend to be restricted by natural or administrative boundaries, but more so by the traveling and movement boundaries of daily life. The functional analysis region (Tillväxterverket 2012), which captures these aspects, is therefore used in the theoretical sampling for this study (Paasi 2009).

New regionalism has spread out through numerous related fields, but the main characteristics are summarized above. In the context of this paper however, new regionalism and its connections with both regional development and economic geography are of main concern, and these aspects will thus be discussed in more detail.

New regionalism in the context of regional development can in part be traced back to research done in the late 1970s and early 1980s on territorial specialized production districts. These regions were later considered something of a model, which other regions sought to imitate, as their economic performance seemed unthinkable in times of deindustrialization and declining growth (MacLeod 2009). Although numerous different theoretical perspectives highlighted these high performance regions, one common foundation was the dynamism of these regions that could not be explained through a Ricardian notion of comparative advantages (Ricardo 1903). Ricardo (1903) laid the foundation of the theory of comparative advantages. The model works with the terms of relative cost, and price, where the absolute cost and price would be altered and equilibrium achieved through pressures on wages and prices, caused by imbalances in labor markets and trade balance\(^1\). Nowadays, and in the regional context, these processes are not operative due to both the openness of markets, movement of production factors across both countries and regions, and the fact that regions do not have individual currencies and exchange rates (Harmaakorpi 2004).

\(^1\) An absolute advantage is when a good is produced at lower cost than its competitor. A comparative advantage is instead when the cost of producing that good is lower than its competitors, relative to other goods produced. The simplest way of explaining the notion of comparative advantage is through an example of a one-factor economy. In this economy it is assumed that labor is the only factor of production. We also assume there are only two goods produced, and the prices of these goods are g\(_1\) and g\(_2\). The production of each good is determined by the labor endowments into each goods production, and these labor endowments will in turn be determined by the wages in each sector. If the price of g\(_1\) is higher than the price g\(_2\), then the wages in this sector will also be higher, and thus the economy will specialize in the production of g\(_1\). Further we assume that the world only consists of two economies, e\(_1\) and e\(_2\). If e\(_1\) g\(_1\) < e\(_2\) g\(_1\), then economy 1 has an absolute advantage in producing good 1, the price of producing good 1 is lower in e\(_1\) than in e\(_2\). With the notion of comparative advantage however, one need to instead look at the relative costs of producing each good, thus if e\(_1\) g\(_1\)/g\(_2\) < e\(_2\) g\(_1\)/g\(_2\), economy 1 has a comparative advantage in producing good 1, the relative price of producing good 1, compared to the price of good 2 is lower in economy 1 than in economy 2. (Krugman and Obstfeld 2006)
As the rules of comparative advantages seem diminished, regions must seek new factors of advantages. These new directions have been especially highlighted in work within evolutionary and institutional economics, where non-market factors tend to be especially important for regions to harness (Harmaakorpi 2004). These perspectives highlighted softer institutions such as trust, habits, and culture that are embedded in the region, leading to networks of cooperation and competition, and essentially spurring growth and development (MacLeod 2009). In this spirit, new regionalism continued to expand as new concepts within regional development and regional strategies arose, concepts such as innovative milieu, learning regions, and regional innovation systems all became well-established research frameworks (MacLeod 2009). The RIS approach used in this study will be discussed further; however another theoretical development in economics is equally important for the chosen innovation systems framework. An initial discussion on endogenous growth theories is therefore appropriate.

2.2. Endogenous Growth
Endogenous growth theory is perhaps best-described through its counterpart, from which it was initially developed, namely, exogenous growth theory. The most prominent growth models mentioned above, Harrod-Domar (Harrod 1939; Domar 1946) and Solow (Solow 1956) explained growth through capital accumulation and depreciation, in effect all nations or regions should eventually converge to a common steady state of growth. The position of this steady state growth is however also affected by technological level, which would alter the equilibrium steady state. This technological level was however exogenous in the models, thus the actual reasons of growth were not determined within the models. This in effect leads to theoretical developments concerned with the dynamics of these links which were missing in the older models. These theories thus naturally came to be referred to as endogenous growth theories. Instead of being satisfied with the notion of different technological levels leading to different growth outcomes, endogenous growth theories seek to explain the dynamics behind the rate of growth (Romer 1994).

Endogenous theories are however also differentiated. They all seek to explain the dynamics of growth, but do so in different ways, thus in the context of this study, the focus will be on knowledge-based endogenous theory. Today it is largely accepted in both academia and policymaking spheres, that knowledge is an essential ingredient for fostering economic growth (Döring and Schnellenbach 2006). While growth theories have always focused on processes in time, the spillover and knowledge transfer effects clearly bring a new dimension of space into the equation (Döring and Schnellenbach 2006).

In traditional neo-classical economic models, knowledge has been seen as a linear process where it is inserted in a production function in the same way as any other input. Early attempts to endogenize the knowledge input were proposed, where knowledge progress occurred through learning-by-doing. Today, this reasoning can be seen as the first steps of endogenous growth theory (Döring and Schnellenbach 2006). Within these processes of learning-by-doing, questions about the externalities of this “knowledge production” arise; if externalities do not exist, then these effects are limited to the firm
or individual in which they reside. On the other hand, if these processes are thought of instead as having positive impact on an aggregate production function, then this must mean that positive knowledge externalities are present. In the light of this, the crucial question rather becomes one of mobility and spread of the knowledge “product”, more than one of its roots. The geographical dimension of knowledge thus brings us closer to the links these economic theories have with the framework of this study — a systems approach to the creation and spread of knowledge.

In this sphere of theories, some pioneering work was done in the late 1960s when Hägerstrand (1967 cited in; Döring and Schnellenbach 2006) examined the spatial process of innovation and knowledge. The core of Hägerstrand’s hypothesis lies in human behavior, and its effects on the spread of knowledge. As these theories were further developed, the term “networks” became central to this new approach. This term is based in the idea that the individual or firm that holds knowledge engages in relationships in which the knowledge is consciously or unconsciously transferred. This approach can be said to have taken something of a middle ground, where it assumes knowledge externalities and spillover effects do exist, but that they are not perfectly communicated over any distance. This was, compared to the purely economical models, quite groundbreaking as the earlier models assume that no barriers exist to the spread of knowledge. They instead assume that knowledge is completely disembodied, and thus cannot explain the diverging growth paths of regions.

On the opposite side of this theoretical field, are models of cumulative causation. Another Swede, Myrdal, who instead assumed that no knowledge spillovers exist, initiated this work (Myrdal 1957 cited in; Döring and Schnellenbach 2006). In this context, knowledge is instead completely embodied in either the firm or individual. This can instead be imagined as a closed system where no knowledge is transferred out of the system. The system itself however, continues to learn and increase its knowledge base at an ever-increasing pace. From this perspective, essentially all of the economic divergence could be explained through the knowledge variable. The more extreme of these theories have received ample criticism for their lack of realism, whilst the middle ground approach have been increasingly the focus of more recent studies. (Döring and Schnellenbach 2006)

As such, the endogenous growth theory with focus on the knowledge economy and the spread of knowledge, together with the new regionalism theories of embedded soft institutions, seem essential to sustained economic growth. These two theoretical developments bring forth the reason for the theoretical framework used in this particular paper, namely regional innovation systems, which will now be addressed more in depth.

2.3. Regional Innovation Systems
The theoretical development of regional innovation systems (RIS) has been influenced by numerous different theories. In addition to new regionalism and endogenous growth theories, major contributions to RIS come from evolutionary economics, institutional economics, and network theory (Asheim et.al. 2012b; Doloreux 2002). Although all these different contributions to the development of RIS theory are important in their own rights, what is interesting with the RIS approach is the combination of these
theories, instead of focusing on one ideal theory. However, the concept of RIS has no clear generally accepted definition, but is typically described as the interaction of different actors set to generate, use and spread knowledge, which in turn would lead to innovation and growth (Doloreaux and Parto 2005). Asheim et al. (2012b) describe the core of the RIS is its emphasis on not only economic interactions, but also the equal importance of social interactions between both public and private agents. This once again puts forth the importance of both market and non-market connections and transfers, as also mentioned in the new regionalism section above.

2.4. Policy Platforms in Regional Innovation System
As defined in the introduction, a system of innovation should encompass all determinants of the innovation process (Sternberg 2009). In this paper, however, not all the determinants will be in focus; rather the focus will be on policymaking. To examine the policymaking aspect of the innovation system, Cooke (2007) has developed the concept of “policy platforms” within the innovation system. This concept evolves from the concept of constructed advantages, which in contrast to natural-, geographical-, or resource- advantages can be altered in the favor of the region or locality in which it is based. These constructed advantages can be spread through many areas, such as infrastructure, culture, etc. However to be able to construct these advantages, Cooke (2007) states that supportive policies are to be thought of in new ways, and this is where the policy platform concept was born. Cooke (2007) conceptualizes the policy platform as one of three platforms necessary to construct regional advantages, but that the other two platforms, namely, industry-, and stakeholder- platforms are already much more developed in comparison. Following the concept of constructed regional advantages, two further concepts are seen as crucial in this development, and should according to Asheim et al. (2012a) be focused on in the policy making process. These concepts are “related variety”, and “differentiated knowledge bases”.

2.4.1. Related Variety
The question of knowledge spillovers, and their geographical reach, has been debated frequently in the academic literature. Whether specialized regions are more innovative than others, is another question which has occupied the minds of researchers during the last couple of decades, without there being any single definitive conclusion. Recently however, evidence has emerged, stressing that both sides of the debate might actually been correct in their claims. This recent evidence has shown that knowledge spillovers do occur mostly within the same specialized sector. The other side of the story however, is that these spillovers might instead be hampered across actors. This might occur when the interactions and networks among actors who are too close to each other in competencies and knowledge, leading to what is referred to as cognitive lock-ins (Asheim et al. 2012a). It can thus be stated that neither too much specialization, nor too much diversity is good for enhancing knowledge spillovers. Instead regional development is most likely to occur when regions have a well-diversified business sector, as long as this diversity exhibits common technological and knowledge features, thus the term “related variety” (Asheim et al. 2012a).
2.4.2. Defining Knowledge

The second concept related to constructed regional advantage is “differentiated knowledge bases”. This concept is related to the definition of knowledge itself, and thus a brief background of the theorizing about knowledge is needed. There are almost infinite ways in which knowledge has been defined and categorized. Initially in economics, knowledge was seen as an input in a given production function, as mentioned above. This notion of knowledge however quickly became obsolete, as it clearly is a much too simplistic view. A common distinction is made between explicit knowledge, which is easily communicated, and tacit knowledge, which in contrast is of a more unconscious manner, and thus more difficult to spread and communicate (Döring and Schnellenbach 2006).

A different way of distinguishing different kinds of knowledge is through their different sources and applications. Economic models often consider knowledge to be a commodity; as such commodified knowledge is mainly a source of knowledge to be considered when it is used in starting new firms, when sold, or through license agreements (Charles 2006). Another form of knowledge is human capital, which is more connected through learning and education. This does not however limit it to formal school education, but also includes on-the-job experience, internships etc. Compared to commodified knowledge, this form of knowledge is more tacit in its nature, and thus less transferable (Charles 2006). A third form of knowledge is social capital, which is even more tacit than human capital. With the exception for the very long-term perspective, it is quite safe to say that social capital is non-transferable as it is part of the locality, rather than the individual. Social capital can be thought of as the institutional setting, the trust, traditions, and networks that are present in the environment (Charles 2006).

2.4.3. Differential knowledge bases

Asheim et al.’s (2012a) description of the concept of differential knowledge bases, divides knowledge into synthetic-, analytical-, and symbolic- knowledge bases. The analytical knowledge base refers to formal scientific knowledge, where codification is relatively easy. This knowledge base is highly explicit, often connected to formal education and research experience, while brought to market through university spin-off firms, patents etc (Asheim et al. 2012a). The synthetic knowledge base normally is in the form of applied research, as demands are sought to be filled, or a specific problem is sought to be solved. In the synthetic knowledge base, tacit knowledge is more important than in the analytical knowledge base, as it results from learning by doing and practical experience. This type of knowledge is to a large extent enhanced by internships, on-the-job training, and similar activities. Its’ innovative aspects result mainly in improvements, and modifications of existing product and processes within existing firms, seldom leading to spin-off firms or start-ups (Asheim et al. 2012a). Symbolic knowledge is highly tacit and context specific in its nature, and relates more to aesthetic attributes, designs, images and symbols. This type of knowledge base is less tightly tied to formal education than to creative skills, and the outcomes are easiest explained as cultural production (Asheim et al. 2012a).
How does then these differentiated knowledge bases act as a means of constructing a regional advantage? According to Asheim et.al. (2012a), it is more appropriate to speak of knowledge in terms of these distinctions instead of traditional classifications, as these knowledge bases most often are combined and intertwined in networks of firms and industries of related variety. These knowledge bases also make no distinction as to which knowledge base would be preferable as high/low tech for example, instead the focus is on the combination and interactions amongst the knowledge bases, which occurs easiest through industry networks of related variety. A regional policy platform based on the two concepts of differentiated knowledge bases and related variety, is according to Asheim et.al. (2012a) preferable. It can relate to, and be applied in any regional context, and it does not require prerequisite resources or industrial base. It focuses instead on creating the most of the regional specific assets. The focus of policy should therefore be on enhancing and nurturing the connections, networks, and collaborations between different but related activities.

Although the focus will be on the policymaking aspects of the RIS, the constituents of innovation systems are not only the actors themselves but great emphasis is, and should be, put on the interactions and relations among them (Sternberg 2009). Thus, in this paper other actors within the system will be encountered through the networks of interaction that policymakers are embedded in. It is also important to take note of the emphasis on intra-regional connections and networks; this is mainly due to the spatial consequences of knowledge exchange. However this does not mean that inter-regional networks and connections are of less importance. Intra-regional networks are not in opposition to inter-regional networks, instead they are complementary to each other, with the main difference being the ability of different types of knowledge to spread and transfer through one or the other (Valé 2010). The following section will present the more specific aims of the paper, followed by a section discussing methodological issues and the reasoning for conducting this study with the chosen methods.
3. Research Aim
As stated above, the general aim of this paper is to examine how Swedish regions and municipalities conceptualize, integrate, and implement strategies and policies relating to a regional innovation systems framework. More specifically, the focus will be on Swedish regions and municipalities excluding the most apparent economic powerfull regions of Stockholm, Gothenburg, and Malmö. The exclusion of these core regions are because less successful and more peripheral regions seems to be under researched in empirical work, and this gap is what this study seeks to address.

Another aspect is that the importance of knowledge is so clearly acknowledged in most of the academic literature (Goddard and Vallance 2010; Charles 2006; Vale 2010; Drucker and Goldstein 2007). Therefore regions with the propensity to develop successful innovation systems are targeted, meaning that regions and municipalities in proximity to a university are exclusively chosen as the study objects. The municipalities’ and regions’ roles in creating environments and incentives for innovation and growth will be examined through three main angles, namely: visions and plans, leadership, and networks.

As Harmaakorpi (2004) describes in his study framework, visionary-, networking-, and leadership- capabilities are three of five necessary capabilities for sustaining regional advantages. These capabilities refer to the region’s ability to exploit its internal resources. Visionary capability refers to the ability of a regional innovation system to create suitable development environments, based on previous strengths, highlighting the path dependency effects, as well as acknowledging potential future strengths. The networking capability is defined as a region’s ability to create networks leading to effective use of those resources available within the network. Leadership capability is defined as the region’s ability to steer the internal processes and resources utilization in desired directions, while avoiding negative lock-in effects. (Harmaakorpi 2004)

Since the scope of this paper does not allow the inclusion of all five capabilities, these three have been chosen as they are seen as have a steering effect on the other two capabilities, namely innovative and learning capabilities. Above all, these capabilities are closely related to policy, which should act as a facilitator to harness and enhance the functioning of, amongst other things, the visionary-, networking- and leadership-capabilities. Thus the aim of this paper is close to the understanding and examination of the implementation of such policies. These angles will be studied in different municipalities, within functional analysis regions, (Tillväxtverket 2012) comprised of at least one major university campus.

3.1. Research Issues
To investigate this, the following specific issues have been explored: 1) the municipal and regional visions, plans and policies, and the extent to which they implicitly or explicitly relate to an innovation systems framework; 2) the relationships and networks between governance, knowledge institutions, and business actors, and their role as part
of an innovation system; and 3) What possibilities/problems does the power distribution between EU, national, regional, and sub-regional levels raise in planning for regional innovation and growth strategies, considering that programs and strategies from all levels of governance need to be collectively implemented?
4. Method and Methodology

"Methodology refers to the theoretical, political and philosophical backgrounds to social research and their implications for research practice and for the use of particular research methods. Methods, on the other hand, refer to techniques used to acquire and analyze data to create knowledge. Methodology is thus a strategy of enquiry that guides a set of procedures.” (Petty et.al 2012)

The following section will first discuss methods and methodological perspective in previous studies with an RIS-approach. This initial discussion leads this study into a case study approach, influenced by a mix of methods. Thereafter the practicalities of this study, the actual sampling- and data collection, and analysis- methods used are discussed.

4.1. Previous Studies on RIS

One major problem in studying RIS is that as there is no clear picture of what such a system looks like in reality, how does one determine if a region can be labeled as an RIS? In addition, there is no real consensus in academia about what an innovation system really is (Doloreux and Parto 2005). As a consequence of this problem of determining the existence of innovation systems, there are no clear methodological paths to follow for a study such as this one. A type of mixed methods approach, influenced by numerous fields has been applied to be able to answer the questions this study sets out to explore. This study does not primarily set out to explore the very existence of innovation systems in the Swedish regions, but instead relies on the notion presented by Doloreux and Parto (2005), that one can find innovation systems everywhere. Accordingly all regions have some kind of innovation system, the question is rather to what extent, and how the involved actors themselves conceptualize this. In order to understand this, it is integral to examine not only the major actors within the system, but equally important, to examine the interactions amongst them.

Chang and Chen (2004) propose three methods in the process of identifying these relationships and interactions amongst the actors involved in the innovation system. The first method is the network approach; this approach puts the firm at the center of the system and thus deals primarily with formal links and interactions with customers, suppliers, competitors, complementary firms, universities, and other knowledge and research and development (R&D) institutions. A second proposed method is the cluster method. This method focuses more specifically on one technology, or one technology sector and the interactions within that sector. This method also focuses on the more formal types of interactions in form of patent collaboration, related patents etc, and through these variables link firms and other actors to each other. The third and final method proposed by Chang and Chen (2004), and the method most closely related to what is attempted in this particular study, is what they refer to as the innovation community approach. This approach is based on the perspective of organizational ecology, and views many types of organizations at the center of the analysis. These organizations include small firms, university departments, research institutions,
established firms, venture capital organizations, regulatory bodies, industrial associations, scientific bodies, suppliers etc. This approach also takes into account the governance perspective and the informal institutional interactions, which as emphasized previously, is a very important aspect of this particular study.

Doloreux and Parto (2005) mention two types of studies that have used the RIS-approach as a general framework. The first type is a comparative empirical study of two or more regions. The comparative analyses seek to find both the common and the specific factors and determinants of the innovative system. The second type study Doloreux and Parto (2005) discuss is what they call a “snapshot study”. These studies instead assess one single region at a time, with the intent to determine the extent to which the particular region truly corresponds to an innovation system. These “snapshot” studies have a greater propensity to illustrate the unique context specific characteristics of a region. This approach thus coincides better with the theoretical point of view that no two regions have the exact same initial endowments, and thus every RIS needs to be based on the context specific particularities in that region alone.

It was initially hoped that this study would be able to apply a comparative case study method, to be able to make some generalizations about the functioning and policies in Swedish RIS. However throughout the process of carrying out the study, the necessity to produce context specific policies even in a relatively homogenous country as Sweden became apparent, and this study moved toward a ‘snapshot’ rather than ‘comparative’ study. However multiple regions and municipalities have been examined in this study, and there will naturally be some degree of comparisons amongst them. In this paper, the regions and municipalities studied are referred to as case studies rather than snapshots, as the intention is to study processes. The snapshot study concept gives a sense of something occurring at a single point in time, and as mentioned previously, both the time and the space dimensions are very important to the RIS-framework. As such, the actual method applied in this study might best be described as an innovative community case study approach. The following section will now discuss in more detail the case study method.

4.2. Case Study Method
A case study method aims at understanding the distinctiveness of a certain case. The method seeks to increase understanding of a complex issue, whether it is a person, an institution, a program, a policy, a process, or a system as in this study. In case study methods, a variety of data is usually collected to enhance the depth of the understanding (Yin 1984). When the case study is of the qualitative sort as this particular study is, the data collection commonly includes interviews, observations, and document analysis. In this study both interviews and document analysis have been used. The case study method is rather open and flexible, as no set data analysis method is conventionally used or touted as the correct one, and instead the method applied is dependent on the specific case studied. In this study, an approach inspired by Framework Analysis has been used (Dixon-Woods 2011). The main argument for using a case study approach in this particular study is that it can deepen the understanding of a complex phenomenon, already somewhat known through previous research. The case study enhances the contextual details of the phenomenon in one or a few limited cases in the real life setting.
in which it occurs. For this paper, a number of more specific cases have been studied, and although each case has its own contextual setting and is treated as a single case, comparisons are made to enhance the broader understanding of the conceptualization of RIS in small Swedish municipalities.

4.3. Selection method
The selection of municipalities to study, was done systematically to correspond to the theoretical frameworks discussed above. The first steps of the selection was done by considering all “Functional Analysis Regions” in Sweden, as set up by the Swedish Agency for Economic and Regional Growth (Tillväxtverket), omitting the three metropolitan regions, since these were not of interest for this study of peripheral economies. The next step was to locate all major university campuses within these functional regions, and eliminate those regions without a university. This led to a total of nine remaining regions. Within each of these nine regions, all municipalities except those where the university is located, were ranked amongst themselves within their region based on five economic key figures:

1. Municipal revenue growth percentage (based on all VAT subjected activities) 2005-2010
2. Total municipal payroll development percentage 2005-2010
3. Employment development percentage of municipal daytime population 2004-2009
4. Percentage of population with at least a three year university or college degree 2010
5. Yearly average of new businesses start-ups per thousand inhabitants 2006-2010

These figures were provided by the Arena for Growth (2012), which is an organization owned by ICA (Swedish supermarket chain), Swedbank, and the organization Swedish municipalities and counties (SKL). Arena for Growth works to promote local and regional economic growth primarily through knowledge mediation, and processes aimed at private and public decision makers. The key economic figures used have only been published by the Arena for Growth, but are based on official data extracted from Statistics Sweden (SCB), with the exception of the new businesses data, which is extracted from Jobs & Society (Nyföretagarcentrum). Within each analyzed region, the top and the bottom ranked municipality were selected. The exception was of those municipalities that were too different in terms of population size. A further selection was done to focus on two regions, thus four municipalities were finally selected. The final selection was done to facilitate the interviewing process, thus those in relative geographic proximity of the researcher. The final selected sample included the municipalities of Åtvidaberg and Söderköping in the region of Östergötland, while the municipalities of Hallsberg and Nora were selected from the region of Örebro. The final selection of municipalities and the rankings within these two regions are illustrated in Table 1 and Table 2 of the appendix.

For the region of Östergötland, Söderköping was the municipality with the combined best score, although not with the best figures in any one category. Söderköping however scored second best in three, and fourth best in the two remaining categories, in the functional analysis region with a total of ten municipalities. Out of these three categories in which Söderköping scored second best, two of them, payroll development, and higher education degree, were still below the national average. In the remaining
three categories, Söderköping showed figures above the national average (Arena for Growth 2012). Åtvidaberg, on the other end of the table, was not in last place among the municipalities in the functional analysis region. It was chosen instead of Valdemarstvik and Boxholm, which had the worst two scores, but only has a population about half that of Söderköping. Åtvidaberg with the third to last worst score was therefore chosen instead. Åtvidaberg’s results were below national averages in all categories.

In the Örebro region, there are a total of seven municipalities in the functional analysis region. The two smallest municipalities in population size had both highest and lowest combined scores, and were thus omitted due to difficulties in comparability. Instead the municipality of Nora with the second best total was chosen. Nora only occupied first place in the higher education category. In Nora all categories, despite being in top in their region, are lower than the national average, except employment development, which is equal to the national average. As expected, the figures for Hallsberg, at the bottom of the regional table, are also well below the national averages in all categories.

4.4. Research method
The collection of interview data has been done by interviewing some of the actors involved in different ways within the policy sphere of the innovation systems. The interviewees were purposefully chosen from the sample regions and municipalities to gain a variety of perspectives. Prior to conducting interviews, steer documents were reviewed as a basis for formulating more context-specific, relevant questions and discussion topics. The interviews were conducted in a semi-structured manner, and discussions included the following broad areas regarding the structures and functioning of the RIS:

- How do regions and municipalities’ conceptualize their relationships to the university? How do they describe the role of the university in municipal/regional development?
- What do actors representing different municipalities/regions see as their role in a) contact with universities, b) fostering innovation, c) surmounting challenges to development, growth and innovation?
- What factors are seen as inhibiting these processes?
- How are these factors perceived to be similar and to vary by municipality within the same region?
- How is collaboration and competition within the region described?

Twelve interviews were held with a total of 13 individuals, with interviews generally lasting between 45-90 minutes. Two people were interviewed together in Åtvidaberg municipality, due to their joint work on the municipal vision-2020. Four were face-to-face interviews, while the remaining eight were conducted by telephone. This was due to time and resource restrictions. The interviewees were:

- Development manager at the Regional Association of Örebro – Telephone interview (Dvpmtn Mgr Ö).
- Project manager at the Regional Association of Örebro - Telephone interview (P.M. Örebro).
- External relations manager at Örebro University - Telephone interview (Ext. Rel. Mgr. Ö-Uni).
- Former Trade and Industry developer at Hallsberg municipality, today regional developer of the logistics industry at the Regional Association of Örebro - Telephone interview (Frm T&I Dvpm Hallsberg).
• Trade and Industry developer at Nora municipality - Telephone interview (T&I Dvpmt Nora).
• Regional Director at the Regional Association of Östergötland – Face-to-face interview (Reg.Dir. Öst).
• Trade and Industry developer at the Regional Association of Östergötland - Telephone interview (T&I Dvpmt Öst).
• Trade and Industry coordinator at the University of Linköping (T&I Coord LIU).
• Trade and Industry manager at the Trade and Industry Centre in Åtvidaberg municipality – Face-to-face interview (T&I Mngr Åtv).
• Municipal Architect in Åtvidaberg municipality – Face-to-face interview (Mun.Arch. Åtv).
• Trade and Industry manager at Söderköping municipality - Telephone interview (T&I Mngr Sö).
• Education Office at Söderköping municipality - Telephone interview (Edu. Off. SÖ.)

All interviews were audio-recorded, and three interviews were then transcribed verbatim. The recordings of the other interviews were repeatedly listened to and summarized, with important sections transcribed verbatim. Transcripts were then used for analysis.

In addition to the primary data collected through the interviews, a number of secondary data sources have been used. These secondary data are in the form of policy documents from EU-, national-, regional-, and municipal- level. These policy documents have mainly contributed to answering the first research question, that is, how and to what extent do the municipal and regional visions, plans and policies relate to an innovation systems framework? This part of the analysis is thus primarily descriptive, seeking to understand the process of policy transfers, how the rather abstract, guidelines of supranational policies are translated to more and more concrete strategies and policies on the nation, regional, and municipal levels. Dolowitz and Marsh (2000) defines policy transfers as: “…process in which knowledge about policies, administrative arrangements, institutions and ideas in one political setting (past or present) is used in the development of policies, administrative arrangements, institutions and ideas in another political setting. (Dolowitz and Marsh 2000 page 1.)”

The analysis of the primary data used in this paper, the conducted interviews, is inspired by a “framework analysis” technique, which will be discussed in this following section. This technique was initially developed by the UK-based National Centre for Social Research in the 1980s, and was explicitly developed for studies with a policy orientation. The framework method is a matrix-based analysis technique, coding data into thematic categories. One of the major advantages with this technique is that it allows the development of a coding system based on predetermined concepts or themes, while at the same time allow some flexibility to combine these predetermined themes with unexpected angles or issues that might emerge at a later stage of the research process. (Dixon-Woods 2011)
Figure 1. Framework analysis technique (inspired by Palesh et al. 2010).

Figure 1 above shows a visualization of the framework analysis technique used for this study. The boxes in the top row represent the broad discussion topics that were used as the starting point for the semi-structured interviews conducted. The interview material has then been coded and analyzed into the initial three issues intended to be examined, which are presented in the aim of the paper. There is also however an equally important section, that takes into account other unanticipated and relevant interesting aspects and issues brought up during the interviews. The following section first presents the descriptive secondary analysis of the EU-, national, regional, and municipal plans and visions. Thereafter the framework technique and the analysis of the primary interview data are presented.
5. Ethical Issues
The primary if not only ethical issue in this study concerns the interviews conducted. These issues have been dealt with, by prior to the interviews, giving the interviewees clear and comprehensive information about the study, the role of the interviewees within the study framework etc. From all the contacted interviewees no one declined interest, two interviews were however never conducted due to time restrictions. Before the final submission of the study, all quoted interviewees have again been contacted, and given approval of used quotations. All interviewees were also given the opportunity to stay anonymous, none of the interviewees however utilized this option, nor did anyone decline to have the interview recorded.
6. Analysis
6.1. EU, National, Regional, and Municipal Policies and Strategies
6.1.1. EU Policies
As mentioned in the introduction, the EU has perhaps been the most important organization for active promotion of regional planning and regional innovation policy strategies (Soja 2009). The importance of the EU in promoting these strategies has also to some extent become more and more apparent. The quite recent flagship initiative the “Innovative Union” is one of the initiatives enhancing the status of the RIS-framework within the countries of the EU. The innovative union initiative is based on a rather broad definition of innovation, stating that it must not only involve new products and processes but also include services, marketing, branding, design methods, organizational forms, etc, and must be thought of in a systems perspective, where actors collaborate and interact (European Commission 2010).

The new strategy emphasizes that smart specialization should be developed to maximize the possible effects of combining regional and EU policies. The commission emphasizes these specialization strategies as a way of focusing public funds to areas with greater potential. A curious aspect of this strategy is however the mentioning of focusing policy measures on what is referred to as regional strengths relative other regions. This aspect is curious as the theoretical assessment of competitiveness concludes that the notion of relative competitiveness between regions seems obsolete, and focus instead need to be on assessing the absolute advantages of regions (Harmaakorpi 2004). Others, primarily Cooke (2007) instead speaks of regions constructing their own advantages, based on available resources, and that this is where policies need to focus their efforts.

A further issue stressed in the commission paper with relevance to this study is the call to harmonize and simplify the rules and procedures concerning the different programs and policies that are actively engaged in the areas of regional development, innovation-, and growth- strategies. For policy-makers on both national and regional levels, efforts should be made to increase the possibility of synergetic effects between concerned activities (European Commission 2010). These efforts are clearly of interest to this study since they directly concern the third research question: what possibilities/problems do the power distribution between EU, national, regional, and sub-regional levels posses in planning for regional innovation and growth strategies while programs and strategies from all levels of governance need to be collectively

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2 The concept of smart specialization is developed by the European Union. The idea of smart specialization is not to impose any specific specialization through top-down industrial policy measures, neither does the concept involve any foresight predictions by consultancy groups or similar organizations. Smart specialization revolves around an “entrepreneurial process of discovery” that in time would reveal what a region can further develop in terms of science and technology. What this essentially means is that the milieus and environments within each region, will in time determine the best path for the further development and specialization of that region. This is thus a process that involves in essence all actors within in the regions, as well as their interactions, and the milieu of the region. (Foray et al. 2009)
implemented? With this short background assessment, it can be concluded that, in general terms, the EU policy seems to be based on an RIS framework (Vale 2010).

Taking a more detailed look into the specific elements and strategies of the EU strategy seems relevant here, in order to be able to assess the extent these measures have trickled down to first national, and further down to regional, and local levels of governance. Eight more specific elements are brought forward in the commission paper, which are meant to be used as guidelines from which regions can design their own strategies. The first of these elements concerns the construction and support of innovative clusters. These clusters are mentioned as an important element mainly as they enhance the interaction of different functioning firms within the same broad sector (European Commission 2010).

The second element mentioned is creating positive milieus for small and medium sized firms (SMEs). More specifically support should especially be focused on R&D intensive SMEs and the creation of new firms, as these are where the greatest potential for job creation lies (European Commission 2010).

The third element highlighted is titled “lifelong learning in research and innovation”. This element focuses on the links between entrepreneurship and university research, stating that stronger emphasis on the entrepreneurial aspect is needed. The paper states that: “[Focusing school, vocational and higher education curricula on transversal competences like creativity, entrepreneurship and initiative will help young people to develop their full potential for innovation (European Commission 2010 page 8)].” The focus thus seems to be on enhancement of the future workforce’s “entrepreneurial spirit”.

The fourth element concerns support of research infrastructure. This element concerns the physical infrastructure, mainly ICT-infrastructure, as well as network structure, connecting distant research teams, sharing of knowledge and resources etc. Within this element, it is mentioned specifically that national and regional authorities should take advantage of funds provided by the EU through initiatives focused specifically at these types of infrastructures (European Commission 2010).

The fifth element emphasizes cultural and creative industries, and the way these spheres have the propensity to link creativity into innovation. These businesses are mentioned as necessary and complimentary to the traditional industrial base, as they flourish especially on the local level, creating important spillover effects, as well as enhancing the attractiveness of cities and regions (European Commission 2010).

Element number six is called the “digital agenda”, and as can be expected from the name, has mainly to do with the spread of broadband access. As with the quite similar fourth element, specific effort should be taken to better make use of the European Regional Development Funds within this field (European Commission 2010).

The seventh element concerns public procurement issues, suggesting that this could in fact be a key driver of innovation. In the words of the commission paper: “Innovative
public procurement means the public sector taking on the role and risks of a lead customer, while improving the quality of its services and productivity...Procurement budgets should include pre-commercial type procurement as well as innovation partnerships (European Commission 2010 page 9)."

The eighth and final key element mentioned in the commission paper concerns the greater challenges that the European society faces as a whole, and which thus needs to be combated together. These include climate change, energy and resource efficiency, raw material scarcity, and demographic ageing. These issues should accordingly be addressed in regional policy and seek ways for partnership in their implementation (European Commission 2010).

While these EU policies are mainly suggestions and guidelines, the regional policies of many individual countries have taken these into account and similarly turned towards a RIS-approach in their own regional development strategies (Asheim et.al 2012b). Sweden is the country with the local and regional policies and strategies of concern in this study, thus a brief look into Swedish national policies and strategies is appropriate.

6.1.2. Swedish National Policy
Currently Sweden has no specific national innovation strategy in place, however there is work in progress, which is expected to be in place during the autumn of 2012 (Swedish government 2012). The work on the innovation strategy is lead by the ministry of trade and industry, but is said to involve all of the government ministries. It is also stated that the strategy will be formed through a dialogue with multiple actors from public-, business-, and civil- organizations (Swedish government 2012). Since no innovation strategy is in place as of today, the innovation plan of the Royal Academy of Engineering (2011) has instead been examined. The Academy’s innovation plan has been examined, due to its concrete specifications of possible measures and policy suggestions for a future national innovation strategy. The examination of this plan however needs to be done with caution. One need to acknowledge that the Royal Academy of Engineering is but one of many actors seeking to influence and lobby towards an innovation strategy in their own best interest.

The Academy describes itself as:

“…an independent forum for exchange of knowledge. By initiating and stimulating contacts between experts from different fields and across national boundaries the Academy promotes cross fertilization between industry, research, management and stakeholders. The Academy brings people together - through lectures, conferences, research exchanges and other projects - to generate new ideas and new knowledge emerges. The Academy has a long tradition of highlighting strategic choices which in different ways involve the potential and problems in society, as well as the potential economic impacts and opportunities for sustainable development. Work is conducted mainly in four business fields:

- Education and research
- Business Competitiveness
- Technology and Society
Royal Academy of Engineering have in their paper “innovation plan for Sweden” worked with regions, politicians, government officials, entrepreneurs, and the business community, to form ideas and suggestions into the proposed national innovation plan. The paper states that: “We are pleased that the political system and government have brought attention to our work and begun the implementation of several of our proposals (Royal Academy of Engineering 2011)”. Given this statement it might seem as if this paper might be a good approximation of what the future national innovation plan for Sweden would look like. Once again however, one needs to consider these policy suggestions with caution due to the specific interests of the Academy itself. The paper starts out with some of the main challenges that face the Swedish economy today, and why increased focus on innovation would be the way forward in combating these challenges. The challenges that are brought forth are mainly the unsustainable character of the Swedish business sector, the Swedish dependence on large corporations, where it is stated that Sweden has the largest per capita number of large corporations in the world today. The need to develop the competitiveness of small and medium sized firms is thus emphasized. A second issue brought forth is the fragmentation of organizations with responsibility for development and innovation, on both national and regional level, and there is need to coordinate these (Royal Academy of Engineering 2011). The academy’s plan also recognizes the region as the preferred level where innovation and growth strategies must be implemented, while at the same time many of the challenges that face the regions are similar in the entire country. The plan also explicitly links and recognizes the regional importance for implementation of the European 2020-strategy (Royal Academy of Engineering 2011).

To make a fair evaluation of the EU-strategy, and its’ transferral into national strategy, a more detailed look into the specific suggestions of the proposal is warranted. The Royal Academy of Engineering’s proposal includes seven main areas of suggestions, which are meant to spur the innovativeness of the Swedish economy. The first of these suggestions concerns higher educational institutions, universities and colleges. The main point of this suggestion is that there is a lack of a clear vision for the universities’ and colleges’ role in a Swedish innovative system. There is also a need for clear criteria on how funds should be allocated through the educational and research system. There are also calls for the importance of higher educational institutions to not mainly be thought of as sources for commercializable innovations, but instead focus on their role as network partners in what is referred to as the “knowledge triangle”, namely education, research and innovation. More specifically the proposal calls for stimulating and fully developing the “knowledge triangle”, through a distribution of basic governmental grants that could give incentives for development of all parts of the triangle. It also suggests increasing the flexibility of the grants, so that universities themselves would be able to more efficiently distribute across its many functions. Other calls are made for the possibility for the universities to fully own the rights to their innovation processes, and also for increasing competition between educational institutions for funds in partnerships with the business community (Royal Academy of
The second suggestion is also related to education, namely skills provision. Within this main category, two more specific questions are addressed, namely matching and validation problems, and the need for a clearer investment perspective of education. Concerning the matching and validation issue, the paper points to the problems for those possessing skills that are gained through practical experience and not through formal education, as well as to the large group of well-educated immigrants, possessing both formal and practical skills. There is a great need to make use of these skills and competences in a more efficient way. Concerning the investment view of education, the paper suggests two more concrete possibilities for handling this issue. The first would be to initiate a system of “education checks” where student thus can “buy” their educations, this system could be financed through transferring some of the university grants into the system of study grants. The other proposed way in which the investment view about education could be enhanced is through a similar system to that used in Norway, where some of the student debt could be written off, in accordance with some criteria, after the student has graduated (Royal Academy of Engineering 2011).

The third suggestion involves the tax system, which the authors feel could be enhanced to create incentives for spurring innovation and growth. The main focus is put on the taxes affecting small firms and firms in an early stage of their development where initial capital is hard to come by. More specialized tax deductions for venture capital and R&D, as well as a simplification of the system concerning expert tax deductions are proposed.

The fourth suggested point is also the most encompassing of all, including eight sub-groups of suggestions for strengthening the competitiveness of Swedish firms, highlighting small and medium sized firms. Without going to into the details of each proposal, the sub-groups of suggestions are; 1) the need for a “competent financial value chain”, meaning that the capital needed for firms in early stages of development need not only include financial capital, but just as important is support through knowledge, guidance, leadership, networking, and coaching; 2) Stimulation of research and development in small and medium sized firms, where time and financing are seen as the two main obstructions; 3) Increasing the public innovative procurements, meaning that a system for pre-commercial procurements, based on a demand without a definite solution yet in place; 4) Enhance internationalization support to small and medium sized firms through development of regional networks and efficient foreign support representation in prioritized markets; 5) Ease the possibilities to hire foreign experts and researchers by simplifying the system for expert taxes—this is especially important for small and medium sized firms with fewer possibilities to purchase this expertise; 6) Ensure that there are sufficient systems for the protection of intellectual property rights, which is especially important for small and medium sized firms, who are less informed about ways for protecting their products; 7) Increase the awareness of design and packaging of products. It is also emphasized that knowledge exchange within this area is highly desirable; and 8) Invest in leadership. Deficiencies in the leadership of small and medium sized firms are pointed to as one possible explanation for lackluster innovative
development in these firms.

The fifth proposal concerns the governmental administration, which needs to be a part of the innovative system since many of its activities have direct as well indirect impact on the conditions for innovation. What is especially emphasized is the need for enhanced knowledge, and changes in attitudes within the administration. There are also calls for a clearer mandate for governance in innovative issues.

Suggestion number six is similar to number five in the sense that it also concerns the public sector and government administration. The need for prioritizing actions within the innovation system is emphasized. Within the governance of the innovative system, there are multiple actors; various government agencies, authorities, and as well other non-governmental organizations directly or indirectly steered by the appointment of board members or councils distributing grants. This system is thought to be far too complex and in many ways unclear. (Royal Academy of Engineering 2011). Below, in Figure 2, there is a visualization of the system.

As the figure shows, there are multiple actors with governmental involvement within the innovation system. Although the explanations in the figure are in Swedish, the mere complexity is what is intended to be shown with this illustration. The black boxes represent the state departments involved, the blue boxes represent agencies and organizations with at least 50% of the board appointed by government agencies, while the orange boxes represent independent organizations and agencies involved in the innovation system. The large green box represents the Swedish counties and municipalities. As seen through the figure, this system is very complex, with numerous agencies and organizations with different functions, however the system illustrated in Figure 2 only represents the financial aspect of the innovation system. One can only begin to imagine the complexity of the system once involving all networks and less formal ties between the involved agents. With this in mind it is easy to understand the proposal for a system with clearer responsibilities and prioritizations.
The seventh and final proposal is also related to proposal number six but concerns the regional level. At the regional level, work with the innovation system is on a more concrete level, where the implementation is intended to take place. Many of the same concerns as with the national system are, however, apparent also on the regional level, where too many and too fragmented responsibilities of innovation and development questions are apparent (Royal Academy of Engineering 2011).

With these short look-ins to the European- and what is approximated as the Swedish national- strategies, it is quite easily seen that they share many of the same general aims and strategies. It might thus be said, that there is a quite significant policy transfer effect
of these strategies. The EU-strategies clearly are of a more general perspective as can be expected, as they concern a much larger area with very different underlying structures, while the Swedish national strategy concerns a much more homogenous setting. Despite these differences in perspective, it can be concluded that the same agenda runs through the veins of both strategies.

More specifically, what is perhaps the most prominent example of similarities between these strategies is within the area of main interest in this paper, namely the policy aspect. What permeates the entire EU-strategy, and is even more visible in the national strategy, is the need to harmonize and simplify rules and procedures in the system. Especially the national strategy mentions numerous times in multiple sections suggestions regarding the need for a clearer mandate for organizations, simplification of the very complex web of organizations, and clearer responsibilities for these organizations within the system. Another aspect that is emphasized in both strategies is the focus on small and medium sized firms, where the greatest potential for job creation is said to exist. There is a very interesting aspect to this emphasis, which relates closely to the theories discussed previously. The mention of the possible impact of cultural and creative industries, packaging, design, and marketing, as a complement to traditional industries closely relates to the theoretical standpoint of including different knowledge bases into the networks of the system. Another interesting aspect that is mentioned in both strategies is the role that public procurement, and especially what is termed as “innovative public procurement”, might have in an innovation process.

There are, however, also some concerns that need to be considered in the conclusion of a significant policy transfer effect. To begin with, the strategy suggestions made by the Royal Academy of Engineering, are no more than just suggestions. Until the national Swedish national strategy is presented later during this year, nothing can be definitively said about the effects the EU-strategy has had. A second concern is the close ties to the European Commission, mentioned by the Royal Academy of Engineering, which in effect might actually have steered the proposals, directly and or indirectly towards the guidelines of the EU strategy. The third concern with these conclusions that once again needs to be brought forth, are the self-interests that might be in the agenda of the Royal Academy of Engineering. With the absence of a fully developed national strategy, it however becomes even more interesting to analyze the Swedish regional strategies, which are already in place in many cases and used to steer the actual development of strategies and implementation today.

Before going further to case introductions and analysis, an interesting statement from one of the interviewees is presented. As strategies “trickle-down” along a path in the direction from quite abstract, theoretical perspectives, to progressively more concrete and realistic policies, there are naturally some problems, which need to be taken into account. This quote, by a regional director…expresses this:

“The definition of innovation systems in academia and in real life politics in Sweden differ considerably. There is also significant difference in what is presented as innovation systems, and its relationship to universities and research. Peripheral municipalities do not exhibit the economic structure that fits well into academia’s view of innovation systems (Reg.Dir. Öst)”
This statement gives some perspective to the actual difficulties of implementing “trickle-down” strategies at regional and local levels. This is an aspect which is important to keep in mind while comparing and analyzing the policy transfer effects of these strategies.

The following section presents short introductions to the cases studied and then the available strategies or visions in place for each of these cases, in turn. Thereafter a summary discussion and analysis is presented for these cases.

6.1.3. Region Östergötland

The functional analysis region (FA-region) of Östergötland corresponds essentially to the county of Östergötland with the exception of the municipality of Ydre, which instead resides in the FA-region of Tranås to the southwest of Östergötland’s FA-region. Ydre is also the smallest municipality in the county in terms of population. This short description of the region of Östergötland will refer to the county, and not the FA-region as information is more readily available for the county. The inclusion of Ydre in this description should not have any major impact.

Östergötland is located in the southeast of Sweden, and has had its current administrative borders since 1719. The current population density is well above the national average at 40 per square kilometer. This however varies greatly across the region, as the largely forested areas in the south are very sparsely populated. The majority of the population resides along the transportation links of the European highway E4 and the main southern railroad, both going from the northeast to the southwest parts of the region. The two main cities, Linköping and Norrköping, together account for 69% of the total regional population. The business sector composition of

Map 1. Östergötland County (Nationalencyklopedin 2012)
Östergötland is, in general terms, very similar to the national composition, however the main deviation is the somewhat larger share of manufacturing and the somewhat smaller share of financial- and business service sectors. The Östgöta plain is a large part of the region and is one of the most fertile agricultural lands in the country. The agricultural sector is therefore also an important sector, although it only employs about three percent of the total workforce. The transportation infrastructure is relatively favorable in Östergötland, with the already mentioned main highway and rail links crossing the region. The seaport of Norrköping is also one of the largest freight ports in the country. (Nationalencyklopedin 2012)

The regional association in Östergötland, Östsam, is responsible for regional development issues and in 2011 published a revision of the original 2006 regional development plan. The main changes are a number of more targeted recommendations. In the revised development plan three broad goals are stated: 1) Good living conditions for all citizens, 2) strong business sector and high employment rates, and 3) sustainable use of regional resources. What is more interesting however, is how the regional plan sets out to fulfill these goals. In the development plan seven strategies are mentioned, targeting different aspects. These strategies are much more descriptive and concrete, and also include the recommendations mentioned above. Not all of these strategies are directly related to the areas of interest in this study, thus the following section will be focused on those most closely related to a RIS-framework. One needs however to keep in mind that the development plan is intended to work as a coherent plan, thus there are natural linkages between all strategies.

The strategy directly related to the RIS-approach is called ‘stimulating a dynamic business- and innovation- milieu’. Within this strategy there are four titles, each of which will be described here. First of is the facilitation of a dynamic business section; it is emphasized that the public responsibilities related to this are mainly in providing education to the future workforce, providing reliable infrastructure, and stimulating new business start-ups. The second section is related to the education issue, more specifically skills provision for the businesses active in the region. This is pointed out as an area where the public sector’s engagement is of absolute importance. It is also pointed out in this section that communication and relationships between the business sector and educational institutions is of great importance. The third section emphasizes the activation of unused potential in the business community. It stated that there is large potential in many firms for expansion that for some reason or another is not tapped into. The public responsibility in this process is to seek out these firms, and provide sufficient support. Further, it is stated that networking efforts in between firms within the same value-chain should be promoted and facilitated by public actors. The fourth and final section within this strategy is networking efforts. Closer cooperation and coordination between different support actors is an essential step to streamline and enhance the effectiveness of the strategies and policies implemented. (Östsam 2011)

Within this strategy there are also a number of more specific targeted recommendations, as mentioned above, which will now be discussed. The first recommendation is directed at the municipalities, and concerns the facilitation of basic business services, for example building permits, environmental assessments etc.
The second recommendation is also directed towards the municipalities, but recognizes their own role as regional association, that they need to enhance cooperation and coordination with business support organizations regarding the efforts directed towards start-up firms.

The third recommendation is directed towards both public and private schools to enhance interest for entrepreneurship while also coordinating these efforts with those of the available support actors.

The fourth recommendation is directed at public financed support organizations. They are asked to provide their efforts and resources towards all types of businesses to a greater extent. Support efforts should also target and support networking efforts between multiple actors.

The fifth recommendation is once again targeted at the municipalities, asking them to provide a physical environment enhancing spontaneous meetings and knowledge exchange between firms and other knowledge providers. The possibilities for development and cooperation with business parks should be further explored.

The sixth recommendation targets publicly financed support organizations, emphasizing the need for them to continuously enhance cooperation and coordination in efforts to develop fewer but clearer offers to the customer.

The seventh recommendation is directed towards the University to further develop their cooperation with the regional business community. This could be done both through student participation in specific projects as well as engagement of academics in R&D efforts in firms.

The eighth and final recommendation within this strategy is related, but is instead directed towards firms and businesses in the region to further take advantage of the resources provided by the University mainly through the same links as described previously. (Östsam 2011)

6.1.4. Åtvidaberg municipality
Åtvidaberg municipality is located in eastern Östergötland county (see map 1 above). The municipality has a population of about 11.5 thousand whereof about 62% reside in the main town of Åtvidaberg. Åtvidaberg is a municipality with a long industrial tradition. Historically copper was mined in the main town up until the early 20th century. More recently the company Facit AB has had a dominant position in the municipality’s business structure, first mainly manufacturing office furniture, while it later made a transition into office machines. In 1990 the firm was reconstructed, however the largest part of the firm is still located in the municipality under the name of PartnerTech AB. About 20% of the work force in Åtvidaberg is still employed within the manufacturing industry. (Nationalencyklopedin 2012)
In 2009 the Åtvidaberg municipal vision for 2020 was published. The vision is named “Åtvidaberg: the municipality with the go-ahead spirit”, and includes four main target conditions for successful development. The first target is pride and shared responsibility, concerning the issue of common responsibility in the development of the municipality. It states that the public-, private- sectors and all inhabitants together must be part of building the future Åtvidaberg. It emphasizes openness, spread of information and democratic processes. The second target area emphasizes further development of the municipality’s safe and interesting living conditions. The third target concerns the economy and sustainability. This section primarily states that to create a sustainable society, mutual and long-term commitment is needed from all citizens. Concerning the economy, the only thing stated is that new ways should be sought both by public and private enterprises with the citizens’ needs always in focus. The final target concerns the business sector, and this target is in essence where one can in fact sense a link to the regional plan and a RIS-framework. It is stated that the public officials and politicians shall actively seek dialog and create well-communicated links with the business sector and businessmen. Also, it is emphasized that the public sector together with the private business sector should act for continuous enhancement of the relationships with and links to the university and higher education institutions. It is also said that communication and commuting possibilities should also be enhanced within the region. (Åtvidaberg municipality 2012)

6.1.5. Söderköping municipality

Söderköping municipality is located in the northeastern part of Östergötland county (see map 1 above). The municipality has a population of about 14 thousand, whereof about 50% reside in the main town with the same name. Due to its favorable location with both the historical Göta Canal and the archipelago, Söderköping has long been a tourist location. Many small firms dominate the business sector, and the largest employer is the municipality itself. (Nationalencyklopedin 2012)

In 2008 the municipality of Söderköping set out a vision for the municipality lasting until 2020. In 2009 the vision was accepted in the municipal county. The vision sets out Söderköping as a municipality with an attractive living environment, emphasizing mainly the natural qualities and the historical aspects unique for Söderköping. Also the business sector is mentioned in the vision, focusing on creative and expansive small firms, mainly in sectors such as tourism and service but also mentioning knowledge intensive small firms. (Söderköping municipality 2009)
6.1.6. Region Örebro

The functional analysis region (FA-region) of Örebro does not correspond as well as the Östergötland example to the county. The FA-region of Örebro is quite significantly smaller than the county, and excludes a total of four municipalities. Hällefors to the northwest resides in its own FA-region, Karlskoga and Degerfors are part of the Karlskoga FA-region situated to the west, and Ljusnarsberg, is part of Ludvika FA-region to the north. However as mentioned above, there is no readily available general information about the FA-regions in particular, thereby even in this case the county will be described to in the following section. One should however keep in mind that this information might deviate somewhat from the actual FA region studied.

Örebro region is located in the south central part of Sweden. The population density of 33 per square kilometer is above the national average, but just as in most regions the variation within the region arise large. In Örebro region the majority of the population resides in the central part of the region, largely corresponding to the FA-region. The central municipality of Örebro is by far the largest with its about 135 thousand inhabitants. The business sector composition of the region has historically been somewhat concentrated to forestry, mining and steel industries. These sectors have however been exposed to very large structural changes during the last few decades, thus diminishing the relative importance of these sectors while causing large employment problems mainly in the more peripheral municipalities outside the FA-region. The
largest growing sectors, on the other hand, within the service sectors have located in the central parts of the county, those corresponding in general to the FA-region. Today about 22% of the workforce is employed within the manufacturing industry, while about 67% are employed in the private and public service sectors. The Örebro region has a central position in the national transport network with the European highways E18 and E20 passing through, as well as the nation’s largest railway yard in Hallsberg. (Nationalencyklopedin 2012)

By first of January 2011, a new development strategy was implemented in the Örebro region. The strategy has been developed by the regional association of Örebro, and sets out four main development areas. Two of these four areas are closely related to the interests of this study, namely knowledge and competence, and innovation and entrepreneurship; these will therefore be described more closely in this section.

The first area, knowledge and competence, is divided into two sections, one relating to children and young adults, while the other is related to the work and business sector. Concerning the schools, it is emphasized that entrepreneurship within the general curricula is an important aspect to stimulate innovative behavior, which also should lead to a general improved interest in pursuing higher education studies. To achieve these goals, coherent thinking is necessary and the developing of cooperation between the educational system and other actors should be sought. The leading pedagogical research at Örebro University is also mentioned, and the role this should play in strengthening the teaching and educational system as a whole. The second section within this development area is related to competence provision to the business sector in the region. Emphasis is put on an increased of the workforce with higher education, which would lead to a more innovative public and private sector. To achieve these goals a demand for more active collaboration between public-, private-, and educational actors is put forth. Through a more active interaction between these actors, it is said that a more long-term and enhanced “matching” in the labor market can be accomplished. (Regional Association Örebro 2011)

The second development area of relevance to this study is innovation and entrepreneurship; this area is also divided into two sections. The first section concerns entrepreneurship and business. In this section, emphasis is on new firms’ start-ups and renewal of the business sector. Also due to the strategic position of the region, special focus is put on transportation and logistical issues. For achieving the development goals within this section a number of elements are put forth as necessary. First, the organizational issues are brought up, stating that a closer and more coherent strategy must be sought by the business support organizations whether they are public, private, local, regional, or national. These organizations must also seek more effective and clear relationships with business communities. Well-functioning capital support systems are also brought forth as of great importance. Here it is also mentioned the importance of not only financial capital, but also that support mechanisms should provide “competent capital”, in the form of knowledge and guidance. As transportation and logistics are also highlighted within this section, some special attention is given to these sectors. Within this sector closer connections between the University and businesses are emphasized, as well as bringing in closer cooperation with firms in related sectors. The knowledge
intensity within these firms is also stated as an important aspect to stay competitive. Environmental sustainability within transportation also has a prominent position in the strategy. (Regional Association Örebro 2011)

The second section within this main development area is innovative milieus. This section mentions the importance of venturing into new collaborations between multiple sectors of the economy. To enhance such innovative milieus and collaborations the role of the University is highlighted. The ambition is to give incentives for more firms to locate R&D departments within the region. To strengthen and accelerate the development of these milieus, conscious and targeted actions need to be taken. Once again the University and the University hospital are mentioned as having great potential for further collaborations with the business community. (Regional Association Örebro 2011)

6.1.7. Nora Municipality

Nora municipality is located in the northwest of the FA-region of Örebro (see map 2 above). The municipality has a population of about 10.5 thousand whereof about 63% reside in the main town with the same name. Historically the business sector in the area was dominated by the mining industry; the mines were, however, shut down in the 1960s. There are still connections to these traditional industrial bases, both in the form of tourist attractions, and the largest firms in the municipality specialize in explosives (Dyno Nobel AB Sweden), and drilling equipment (Hagby- Asahi AB). The largest employer in the municipality is however the municipality itself. (Nationalencyklopedin 2012)

The municipality of Nora does not have any clear stated visions or plans of interest for this paper, although there are 16 strategic goals set up for the current political term. These goals are however outside the area of interest for this study.

6.1.8. Hallsberg municipality

Hallsberg municipality is located in the southeastern part of the Örebro FA-region (see map 2 above). The municipality has a population of about 15 thousand with about 47% residing in the main town of Hallsberg. The business sector in Hallsberg is dominated by the transport and logistics sector with large employers being SJ (the largest railway operator in Sweden), former Banverket (responsible for the administration of the railway system in Sweden) now part of Trafikverket (Swedish Transport Administration), and the municipality itself. (Nationalencyklopedin 2012)

In 2010 the municipal council in Hallsberg presented a vision for the coming years. What is of interest here is the emphasis on logistics and transportation, where it is stated that the municipality together with the regions should continue to develop Hallsberg as a logistics center of international standards. The other aspects of the vision and goals are, in general, to provide sustainable living conditions for all citizens, good education and care facilities, and a flexible business sector. (Hallsberg municipality 2012)
6.2. Summarized case study strategy analysis

The relation and policy transfer effects of EU-, and national- strategies to the more concrete regional and municipal strategies are by no means as easily distinguished as those between EU-, and national levels. In the municipalities studied, the absences of similarities are most evident. The main reason for this seems to be that the municipalities studied in general do not have any clear stated strategies, and thus also lack strategies relating to development and innovation specifically. There are however some points that need to be mentioned. Almost all municipalities do have some statement in either a vision or strategy that relates to the general EU-strategy concerning greater challenges such as environmental sustainability, resource efficiency, demographic aging etc. Even though this is mentioned in the EU’s “innovative union” strategy, it does seem to be somewhat beyond the scope and aim of this study. More specifically however, the connections with the EU-, or national- strategy are conspicuous with their absence. In Åtvidaberg’s vision, there is some reference to needs for developing networks and collaborations between public-, private-, and university actors, however nothing beyond this. Similarly, in Söderköping, there is reference to the importance of cultural and creative industries, notably in the tourism sector. One might draw connections both to the EU-, and national-strategy, as well as to the theoretical discussion of differential knowledge bases, but as in the case of Åtvidaberg, the insignificant volume of these relations, make it difficult to conclude anything but an absence of policy transfer effects to the municipal level.

At the regional level the relationships to EU-, and national- strategies are by no means as hard to distinguish as on the municipal level. The regional level has as mentioned previously been touted as the level of governance most appropriate for implementing these types of strategies, thus the very existence of such strategies come as no surprise. At this level, and in these regional strategies, there are thus also easily discerned sections specifically targeting aspects concerning an innovation systems approach. Regarding the case regions of Östergötland and Örebro, there are naturally some differences in both the content and format of their strategies. For example the transportation and logistics sector is specifically highlighted within the Örebro regional strategy, while the Östergötland strategy emphasize other sectors more specifically.

What is most interesting concerning the influence of higher-level governance strategies is however, the common features that give a better sense of the policy transfer effects. One aspect that is emphasized very clearly in both regional strategies as well as in the EU strategy, while not found to the same extent in the national strategy is the implementation of a school curriculum with clearer emphasis on entrepreneurship.

Another aspect that seems to be very apparent in at least national- and both regional-strategies is the notions of skills provision and competence development. These aspects highlight the back-and-fourth cooperation and networking between public-, business-, and educational- actors. An interesting aspect of this is that while the EU-strategy seems to emphasize the connections between university research and entrepreneurship in a more direct way, the national- and regional- strategies put emphasis on the more indirect links between university and entrepreneurship, via skills provision and competence development. In relation to these ideas, another interesting remark by an interviewee serves to highlight these aspects:
“The university research is, in earlier stages, a very important factor, mainly because of the input it provides further downstream where it is the basis of providing a quality education for the finished product, that is, well educated students. If the system is not provided with new research, the education provided will be for the needs of yesterday, instead of today’s or tomorrows ... the important contact interface is the availability of a new and highly skilled workforce, that from within can initiate and implement new approaches and methods. Not bypassing the entire student system and going straight into a cutting edge research center. (Reg. Dir. Öst)”

Yet another interesting aspect that is apparent in both regional strategies as well as both upper-level governance strategies is the emphasis on the need to clarify and streamline both organizational structures, the mandate of the different organizations and associations, and coordination of supportive actions. This aspect is perhaps the one issue that “trickles-down” through each stage of the policy hierarchy. It will be left unsaid for now, if the reason for this aspect being most prominent, is that it is a means to an end, meaning there is a genuine need for action within this specific issue. What can be said however is that, in general, there seems to be some rather apparent policy transfer effects even at the regional level of governance. However, as mentioned above, these effects seem to end there, and a substantial gap can be exposed between the regional-, and municipal levels.

6.3. Framework Analysis
In this section the framework analysis technique discussed previously will be applied in the analysis of the primary data sources, namely the interviews conducted. The results of the analysis are structured to discuss each of the initial three issues which were aimed to be examined, and presented in the aims of the paper, in turn. After this, a discussion about the other interesting aspects which were not anticipated, but found during analysis will be presented. During the analysis of the data-material, recurrent themes within each issue were sorted, and these will be discussed separately. The range of responses were also noted and sorted during the review in the first stages of analysis. Another important aspect during the review of the material was how these separate issues, and responses to them vary with regard to the interviewees’ diversity of experiences, and their attitudes. These perspectives need to be taken into account as they may have steered their conceptualization of the issues discussed. During the later stage of analysis of the material, it is important to take notice of the varying definitions used by different interviewees. The analysis has mainly been an effort to map out the nature of the issues discussed, and find associations with regard to their position, their experiences, and other circumstances that may affect the conceptualization of the discussed issues. Further, some explanations are developed with regard to similarities and differences in perceptions of some of the issues.

6.3.1. Visions and Plans
The importance of clear visions and plans are highly important in both the local and regional setting. A clear vision sets a common path for all involved actors, facilitating the implementation of strategies, projects, and goals on a daily basis. A clear vision is exhibited, not in specific projects with a beginning and end, but as something that
influences and underlies all work that takes place. The words of Harmaakorpi (2004) brings forth these aspects:

“Regions are strongly dependent on their past and have to continuously make new decisions during the ever-reigning insecurity… …The insecurity in a regional innovation system can be reduced by the creation of future oriented knowledge and visionary capabilities (Harmaakorpi 2004 p. 112)”

In the analysis, the experiences and the context of the interviewees’ position and place, have been very clear in the visionary and plan issues as compared to the other issues addressed. This became clear as the range of responses was very wide, and at the same time few specific themes consistently recurred. The instances where themes were recurring were mainly in the context of discussion related to actual, implemented visions or plans. The clearest examples of this are where visions were aimed at the living environments, emphasizing proximity to natural and recreational milieus. These visions were noticed in many of the interviews, and not only with regard to the municipality in which the interviewee was based, but rather as a general vision for many peripheral municipalities as complements to the core areas of the regions.

“We have had a fair amount of people moving here. They have moved here, sometimes businesses as well, because they find it important with a nice place to live here in Bergslagen (undefined geographical area in central Sweden). (T&I Dvpmt Nora).”

”Some municipalities, especially those closest to Örebro, they work in essence mainly as commuter municipalities… they try to create pleasant living environments, and they also exhibit an increasing population (Frm T&I Dvpmt Hallsberg).

What these interview quotes exemplify, is not only the existence of visions and plans like the ones explained above, but also how clear visions also give way to the possibility of successful strategies when implemented coherently. Other instances where the visional aspects were discussed were in relation to the difficulties of changing traditional and cultural paths. The association between visions and what is referred to as path-dependency should come as no surprise. These effects are mentioned in close relation in theory, and as shown above in the words of Harmaakorpi (2004), are in fact one of the main reasons for the importance of a clear vision. Even in the rather small scope of this paper, these issues appear both in negative as well as in positive terms. When they were discussed in a more negative or problematic sense, they were most often related to a cultural path-dependence of traditional industry. These cultures are often very difficult to break down, or rather incorporate into a more innovative future vision. Some of the interviewees discussed this in terms of a cultural lock-in, while another referred to it as a “backpack”, weighting down the development of the municipality. The following interview quotes show how this was conceptualized within some of the municipalities studied.

“Even as the vision has been accepted and tries to be implemented, we are stuck in some way, with one foot in the new vision, while the other still in this old way of thinking (Pub. Adm. & Dvpmt. Eco. Åtv)..."
I would say we are in the middle of a process of change from a distinct mill town culture, into something else. This culture is something we need to safeguard and harness, but in a way that it makes it a part of a more future oriented vision (Mun.Arch. Åtv)."

In the cases in which these issues were discussed in more positive terms, they were often related to a culture of small business entrepreneurship. This type of cultural path-dependence was difficult for most interviewees to explain. The following interview extracts are exceptions, as the interviewees explicitly reasoned about these aspects.

“I guess it is some kind of a cultural thing… we are quite successful in sports, and I suppose that there is an attitude that makes one dare to take on these ventures. We are in Allsvenskan (Swedish premier soccer league), and for a small municipality like ours, we just seem to be able to fling these things out. I guess you could call it entrepreneurial spirit (T&I Mngr Åtv).”

“ I believe that concerning the positive new businesses figures, they evolve through the long standing culture with especially small businesses ventures here in the municipality. I guess you see and socialize with the people around you, who often are self-employed, and thus see the possibilities that exist (Edu. Off. SKöping).”

What becomes quite evident in the case of these path-dependence issues is their importance, whether they are termed cultural spirit, or something else. The importance of these factors is also very clear within theoretical debates, and might be even more so in small peripheral settings. The difficulty with these issues often lies in their problematically abstract nature—how can one operationalize, or quantify such effects? Another issue is what was imagined to be the quite simple task of discussing these issues, has through the process of conducting this study been noticeably more difficult than initially imagined. Despite the vague and abstract nature of these issues, it can be concluded that they do have clear and noticeable effects on the processes within the innovation system, and are much too important to disregard, perhaps even more so in the context of small, or peripheral settings.

6.3.2. Networks
The aspect of networks is more or less the essence of an innovation system- Networks in this context refers to the links, interactions, and transfers that the actors within the system engage in. Even though the task of measuring the actual importance of the network within an innovation system is a difficult one, many attempts have been made. Döring and Schnellenbach (2006), in reviewing some of the empirical evidence, summarize the findings:

"Local and regional networks have been shown to exert an essential, significantly positive impact on innovative activity in all surveyed districts …a general importance of networks appears to be supported by the evidence (Döring and Schnellenbach 2006 p.386- 387).”
The importance of networks within a well-functioning regional innovation system is, as shown, hardly disputable. There are however multiple types and constellations of such networks, and in the context of this paper focusing on policy aspects, the emphasis has therefore been on networks involving public actors. Also, since the reasoning behind selecting these particular case regions was that they exhibited a major advantage in their proximity to a university, networks involving public actors and the universities were the primary topic of discussion during the interviews.

What first became apparent during the interviews and even more so during their analysis, was the importance of not only the formal networks, but also the extent and importance of the informal networks within the system. During the interviews, formal networks were mentioned and discussed a total of 29 times, and were discussed in all the interviews. Although the informal networks were not mentioned and discussed to that same extent, they were still mentioned a total of 12 times in all but four of the interviews. The importance of these informal networks are also often highlighted in the theoretical debates, as made evident by the following quotes.

"A key challenge is to enhance the role which universities, and their staff and students, play in the development of such networks of civic engagement, and hence in the wider political and cultural leadership of their localities (e.g. through the formal and informal engagement of universities in the local political process, through university staff serving as elected politicians or providing a source of talent for local administrations, contributions to the media, etc.). (Charles 2006 p.121)"

"There is evidence that these universities, more than others, engage in their regions on an informal, personal basis. This makes their engagement often less clear-cut and less visible, although not of less importance. (Boucher et.al 2003 p. 894)"

"Networks of regionally clustered businesses and institutions, therefore, offer two broad opportunities: formal exchanges of knowledge through market relationships, where proximity allows the establishment of closer ties; and the informal exchange of knowledge in social networks of individuals. (Döring and Schnellenbach 2006 p. 388)"

In the empirical interview data in this study, these informal networks and relationships were most often mentioned in the form of individuals having personal backgrounds within academia, or still part-time employed at the university. Although these types of relations were the most common informal ties, a multitude of different relationships were noticed, including individuals serving as board members in related organizations, and former work places where contacts and knowledge exchange still took place, etc. Because of the wide variety of these relationships and links, it is difficult to generalize the specifics, however the following quote seems to summarize it somewhat.

"With my personal background, and what I have carried with me, with my five years at the board of the university’s holding company, I could say that I am quite familiar with these issues...With my very well established personal contacts at the university, I believe this is a large advantage in this job, and will be so for Söderköping as well...I haven’t been at this position for very long yet, but I am still on the board at Jobs &
Society (Nyföretagarcentrum), so I can work very actively with these issues there, which I of course also do. (T&I Mgr Sö)”

The above quote shows these multiple informal networks that are created through personal experiences and positions. It is also interesting to note how these relationships are conceptualized by the individual, and the acknowledgement of the importance of harnessing and taking advantages of them. Although the importance of these informal networks should not be disregarded, the large majority of the networks within the innovation system discussed are of a more formal kind. Not only are the more formal networks in the majority when it comes to how often they were discussed during the interviews, but also when one relates to the policy issues of relevance to this study; the formal networks are those that can be directly affected and steered through policy actions.

Without going into the details of the composition of the different networks, the most common form involved all three of the actors emphasized in this study, namely, municipalities, regions and universities. Many of the networks discussed during the interview did not however include any of the aforementioned policy actors, but these networks instead involved mainly businesses, support organizations, and different sections of the university. Regardless of the composition of the networks, the most common ground for these discussions revolved around the area of skills provision. The following quotes show how this was commonly conceptualized.

“Taking a look at the general role of the university in the region, it’s kind of bringing in the cooperation between businesses and students, so to speak. Giving the opportunities to practice their skills during their education in a better way…finding a function, at least some kind of feedback for what has been studied, through some kind of practical steering. (T&I Mgr Åtv)”

"If one were to simplify this, the most important role of the university for the region, relates to skills provision, through the examination of students…the municipalities and the business community’s role is to link up with the university and provide these opportunities, offering internships, trainee positions, and also to market themselves as potential employers, all to keep the workforce within the region. The regional association’s role in this, is to establish common interfaces and forums, where the different parties can meet and discuss what is relevant education and research for the region. (Reg. Dir. Östsam)”

Although there seemed to be some sort of a consensus around the fact that skills provision is the most important aspect of the university’s role for the regions, and similarly the related networks were those that were emphasized. There were however a few instances where the networks mentioned instead related to the university research sections, emphasizing the importance of these. The following quote illustrates this.

“We (the university) have many contact interfaces, and I’d like to bring forward two of them. ALMI are the ones whom primarily develop ideas from already existing firms. These are often great ideas, but often not tied to any new knowledge. In our county we
have an incubator in part for that aspect, but also one for the more university related ventures. We try to reach out to the businesses, in part for telling them about our existing ideas, in what we call our idea banks, but the businesses themselves can of course come with their own ideas. However those things like internships, and student projects within firms, there I think you need to make a clear distinction when discussing innovation systems...I do share the view to some degree, that it is important to develop the existing small and medium sized firms, assist with skills provision etc, but if we take a look at the research going on here, they really have tremendous potential for those companies that are in on this and part-finance of the projects, this is where the greatest potential exists as I see it. For innovation, concerning the students, they use their knowledge through skills provision, entrepreneurship and such, but the truly innovative power is the one produced through all these research results produced at these educational institutions. (Ext. Rel. Mngr. Ö-Uni)"

With this statement in mind, this general consensus described above about the importance of skills provision does not seem all that certain. In general there seems to be an acknowledgement of the importance of both skills provision and research for the success of an innovation system at the regional scale. However the perception is that in the more peripheral setting of small municipalities, or those of small and medium sized firms, the relation drawn between the university functions, their own activities and the networks in between are more easily conceptualized through skills provision, rather than groundbreaking research.

Another interesting and very important aspect that needs to be considered in relation to the discussion above about what the most important output from the system might be, is the extent of the influence that the above factors actually have. This study has focused on the policy aspects of the RIS approach, which although highly relevant and interesting, has not received the attention deserved. This may be because most of the functioning within an innovation system is not done by policymakers, but rather happens due to market forces.

"Above all, one needs to establish that the majority of all businesses do not develop due to their involvement with a project manager at the university, because they are involved in a business development program at ALMI, or because they are in an incubator; they develop due to customer, or supplier demands, because they make the effort to invest in a new product. It is not because some publicly funded business developer tells them so. One needs to remember that we are talking about a system that collectively works with about 20% of the total business stock, and then we are talking about everything—financing, guidance, new-business support, incubator support, export counseling, the whole package—then we reach a maximum of 20%. (Reg. Dir. Östsam)"

The policy aspect of such a system is thus only a small part. This is important to acknowledge. Thus instead of discussing what type of networks are most effective in producing output within the region, what one might instead consider is how policy makers, with the help of these networks, can in fact support an environment—a milieu that supports market activities, that in turn will prove innovative and produce desired outputs. This is however not to say that the previously discussed issues, which were
brought forth in the interviews, are of any lesser weight. The purpose of this discussion is rather to emphasize the balance between the parts of the system that function well at the hands of market forces, and the other side of the system that might need some public involvement, some market complementing efforts. The networks discussed in the interviews, whether completely initiated and driven by market forces or otherwise, are in any case supporting the system by creating a cooperative milieu, and environments which in the end should enhance the innovativeness and success of the region. As Charles writes:

"Regions or localities that are rich in such networks encourage social trust and cooperation because they reduce incentives to defect, reduce uncertainty, and provide models for future cooperation. (Charles 2006 p.121)"

6.3.3 Leadership

Leadership is commonly recognized as a very important factor for developing a well-functioning innovation system (Charles 2006). As within any business or organization, leadership in the context of a wider system is equally important. As mentioned previously, Harmaakorpi (2004) describes leadership capability as one out of five necessary capabilities in the successful creation of an innovation system. In addition, leadership should act to steer the rest of the system in the desired direction. Leadership is, in this way, thus closely tied together with the other main issues targeted in this paper, as it guides them in desired direction. The general aim of this study is to explore the policy aspects within the innovation systems. Cooke (2007) draws a very short and concise conclusion regarding this relation:

“The policy key is leadership on each part of a strategy… (Cooke 2007 p. 11)”.  

Although short, this statement is very pronounced in showing the importance of leadership. During the interviews the notion of leadership was predominantly defined, not as personal or individual leadership, but rather the leadership taken on by certain organizations, municipalities, or other actors within the system.

In the majority of the interviews the discussion on leadership concerned regional leadership, the trust the organizations hold, the undefined mandates mainly of regional associations, and/or coordination and efficiency issues with the system. The large majority of interviewees did find the system very complex and complicated, they said in general that there was no clear mandate to which issues regional associations were to deal with. The issues of unclear mandate for the regional associations were mentioned a total of 14 times in the interviews. The following extract show in what manner these issues where generally described.

“Östsam has not had any clear mandate in this region in regard to which issues they are supposed to engage in. From the start the message sent, was that the region needed to act strong, therefore being in agreement with each other. The way the talk went, was that we will be the best in cooperation, and working together. It became quite toothless,
they seemed kind of scared to take on conflicts and such... If they are supposed to have this mandate, while at the same time need be in agreement with all involved municipalities, it tends to become quite unclear (Pub. Adm. & Dvpmt. Eco. Åtv).”

The above quote shows that from a municipal official’s perspective, it seemed that they essentially do not understand what the regional association’s actual function was within the innovation system. However the same respondent mention that within other fields, there is another type of certainty.

“Concerning the cultural issues they are rather clear, and have been for some time now (Pub. Adm. & Dvpmt. Eco. Åtv).”

Although these extracts come from just one region, the same issues seemed apparent even in the other case region studied.

“In Örebro we have the County Administrative Board, but then we also have the regional association, from what I understand other regions, only have the County Administrative Board...I guess the regional association has a quite difficult role then, maybe they would need a larger role, or at least a clearer one (T&I Dvpmt Nora).”

“Today we have the regional association to deal with, but it should be said that there are some problems within it. When the regional association was founded, it was a political assembly, although it is not elected directly, but the members are appointed by the municipalities. Therefore it is not the mayors (kommunstyrelseordföranden) who make up the regional board, but a bunch of other politicians. It has been noticed during the years, that there is a gap there, in the end it is still the mayors who need to meet and pursue the issues (Frm T&I Dvpmt Hallsberg).”

With these statements in mind, it might seem easy to conclude, that there is a need for a clearer mandate for the regional associations. There are however, also voices suggesting that many of the issues discussed should perhaps not be in the hands of the regional associations at all.

“I am not so sure that the regional associations should be an operator in this, they are an actor, a financier, but they are not the ones who should arrange the meetings, I do not see them as a broker, this is something we need to do ourselves. The people at the regional association should act to see that there is a plan, a strategy, a consensus, they should be part of financing the system, but they can never own the questions of cooperation, and coordination...the regional association’s task is not to map out the business structures, they are useful as a channel where we can tell about our activities, and share information. However, the actual activity, the operative part is something we need to do ourselves (Ext. Rel. Mngr. Ö-Uni).”

There thus rather seems to be quite fragmented views of the roles of the regional associations and their “to be, or not to be” in the regional leadership. The general picture tends to show that while the municipal actors seem to want, and need, a stronger,
clearer mandate, and functioning of the regional associations, other actors might not want to centralize leadership to a regional association.

Another aspect in regard to the issue of leadership that was frequently brought forth, was the complexity of the system as a whole, with the very large numbers of organizations engaged in the innovation system. These issues are, as previously discovered, also one of the issues that have seemed to have been of concern in both the EU-, national, and regional strategies. During the interviews, the context of the complexity of the system and its relation to the multiple actors involved was mentioned a total of 36 times. Within these 36 instances the lack of information about the system was mentioned eight times, coordination issues, and efficiency issues, six times each, the issue of consolidating organizations, and the need for a more customer demand based system, were each mentioned five times.

The frequency with which these issues were brought up, and the broad range of the issues raised clearly shows that these are important. This is in line with how these issues are mentioned in other contexts, e.g. in the strategies at all levels. One interviewee especially manages to explain many of these related issues in rather concisely.

“the system is messy, it is very messy, and this is a problem…Right now we are 40 operators in the system, that’s the way the support system looks at this time. We need to gather the whole system, tighten up, and build a trust to better suit the needs, we need to better package customer oriented offers, not be so supply based, just because someone at the Swedish Agency for Economic and Regional Growth tells us to do x, and then everyone needs to do a project according to this. We need to relate to what we need to do, and when we need to do it, and also how we can channelize this to the customers…We don’t need to have all these different actors, all becoming subcritical and competing for tax money within the same segment. We need to clarify the public offerings, the public engagements, and channelize these, preferably through regional associations, since we know the system. (Reg. Dir. Östsam)”

Although this extract explains many of the problems in a very concise manner, the extents of the issues seem quite clear. The majority of the criticism however seem to come from the public actors, municipal official etc. When asked about the feeling of how the business sector felt about it, the responses where more often than not, less critical.

“Well, in general I believe they also find it somewhat messy, but with the certain needs that they may have…then its ALMI, or Vinnova or one of those organizations they get in touch with. There I believe it has worked well, I believe it actually works very well, if you get into contact with ALMI, they have some kind of a holistic view and then connect with other actors if necessary. I believe that the structure in the regional association, there, you don’t really get a clear picture about these roles, so for us working in the municipality there is a certain fuzziness, not the same clarity that you might perceive for businesses when contacting ALMI, there is a whole different clarity and response there. (T&I Mgr Åtv)”
These criticisms, whether they come from municipal officials, businesses, organization or otherwise, seem to have had effect. Although there were many associations and discussions concerning them, many of them actually were along the lines of improvements within this certain aspects. There was however some uncertainty here what has actually been done, or rather if the intended effects have been reached. The following two quotes seem to sum up the different standpoint within these discussions.

“Well concerning these issues, we have at the regional level rounded up these organizations pretty well, there is a collected effort, and we have good organizations working with these questions. If one however would visit the smaller municipality around the county, they are kind of unaware, they haven’t really engaged in this, there are some informational problems, that I do notice. (Frm T&I Dvpmt Hallsberg)”

“There is an abundance of organizations within this (system), there has been a whole lot of talk about it, they were going to coordinate and integrate them a bit more, I don’t think we have really seen a lot of that yet…I would probably like to have some more of that, that’s integration among these organizations… I believe that one or a couple of these actors could probably be merged with one another (T&I Dvpmt Nora).”

It becomes rather clear that it is not only the complexity of the system itself that is problematic. There seems to be different conceptions depending on the position of the interviewee. In general the interviewees working at the regional level seem to have a quite clear picture of the system, while on the other hand the interviewees from the small municipalities are not as well informed. It is probably challengeable to describe this as a mainly informational problem. Rather the lack of resources and personnel at the small municipalities means that perhaps a single person is in charge for dealing with everything concerning the municipal business sector and environment including the integration into the innovation system and the regional cooperation’s. If this was to be the case, it seems hard to put blame on some informational problems. One interviewee in particular seemed to take stance in these issues and really challenge where the actual deeper problems are rooted.

“Well for me personally its manageable to memorize the different actors that are part of the system, one could really think about if this is really efficient, I couldn’t really say, I can in certain instances feel that it might seem contra productive when one actor has no idea of what another actor is doing. There is definitely a need for better coordination…everybody is talking about streamlining the processes on regional and municipal levels, we have done that, we have reached that point, on the other hand I cant really say I feel it is done at the national level…One needs to really ask oneself if these really are the most important issues. If this is the type of system Sweden is going for, then we need to talk about what kind of resources we are willing to invest in it. Of course there is organizational issues, like that of efficiency, which pop up when the funds aren’t sufficient. Sure the system is messy, but it is manageable if you put your mind to it, but that’s not where the problem is…Our greatest challenge is the financing, that we all become subcritical, and that we don’t have enough employees, coaches, advisors etc. Then we put focus instead on that its messy over here, that doesn’t really help us, now does it, we can manage that, we are supposed to know this system
right?...we are losing focus on what really is the issue, there is no shortage of ideas, there is no shortage of entrepreneurs, there is however a shortage in the capacity for the system to handle this, to take care of business. This is what we need to focus on. (Ext. Rel. Mngr. Ö-Uni)"

When summarizing these standpoints, one gets a sense that the municipal actors feel that the regional actors should do more regarding these issues. On the other hand the regional actors seem to have acknowledge the severity of these issues, and really putting efforts into it. However it also seems that the regional actors feel that at a certain point their hand are tied, perhaps some actions need to be taken at an even higher level. These discussions bring ones focus back to the actuality, that there is no national strategy in place. Once again taking look at Figure 2 above (p. 28), one can take notice to the number of actors involved, and perhaps more specifically the eight different state departments involved in one part or another of the system. That is eight different state departments out of a possible twelve, two thirds of all state departments are involved. What other instance can one think of where two thirds of the state departments are dealing with the same, yet broad issue? When conceptualizing the issues in this manner, it seems more natural than not, that not all the funding, guidance, and processes go hand-in-hand, and probably are in many cases conflicting, and even contra productive. Although these further questions are enticing and very interesting they are starting to expand beyond the reach of this study, and must therefore be left without further discussion.

What is however within the scope of this paper are the many interview discussions along the lines of leadership, that also concerned the power-relations between the different municipalities within each region, what role the core municipalities took on, to what extent the smaller municipalities felt underprivileged etc. These issues were not discussed as frequently as the other discussed leadership issues, but were nonetheless mentioned a total of 13 times in all but one of the interviews. According to these discussions it seemed that in general everyone acknowledged the lead role of the core municipalities, and saw the importance even for the smaller municipalities that these core areas did well.

“The cooperative climate in the region is very good at the moment, I have a feeling that this envy or what one should call it, towards the core municipality is diminishing. Also I think the core municipality has a much more humble stance today, than they used to have. Everyone is becoming more and more aware of the fact that we are all connected. (Frm T&I Dvpmnt Hallsberg)”

“I hope that the smaller municipalities do not feel underprivileged, I think they have felt that way but believe that everyone is much more open and understandable of the different municipalities roles in the system. Ten years ago the general picture was that, if the core municipality was to gain it would be at the expense of the surrounding smaller municipalities, that discussion is non-existnet today. (Reg. Dir. Östsam)”
Although the feelings that those smaller municipalities’ were underprivileged seem as something of the past, there were still some problems brought forth relating to similar issues.

“An important part if this is that Linköping and Norrköping as the two large municipalities, take on the leader role, which we might not really have seen enough. We of course become very dependent on what goes on in mostly Norrköping, but also Linköping since we are located so close. Its important that they find that big brother hat in some way, and that we can find the form under which big brother and little brother should work. There we have some ways to go, they need to step up and take their responsibility, then I think most things will be solved…they do however need to engage in this with a large amount of humbleness, the greatest concern is if they do it excessively and suffocate us smaller municipalities. (T&I Mgr Sö).”

“The biggest problem in this case is probably the cooperation between Linköping and Norrköping, which is much better, but still needs improvement, they haven’t really done enough the last couple of years. It was more intense and sincere a few years back, they are real old antagonists, and that has been wiped away, now we are in some type of no mans land, they are in a somewhat neutral relation at the time being. (Reg. Dir. Östsam)”

In accordance with this quotes, there still seems to be some issues with the power relations among the municipalities within the region. However these problems do not really concern the relation core-peripheral municipalities’, but rather the relations between the two cores in Östergötland. In the Örebro region where there is an undisputable core in Örebro municipality, this regions is clearly very monocentric, which in regards to these issues seem preferable. Östergötland region on the other hand, with a duo of core municipalities seem to struggle more with these issues, and this clearly is something that is highlighted by the actors within the region.

6.3.4 Other aspects
The three angles described previously as those especially targeted to examine the issues raised in this study are rather broad. They have encompassed most of the broadly discussed topics during the interviews, and in extension managed, together with the strategy analysis, to enhance understanding of the issues meant to help answering the main research question. There were however some other interesting aspects raised during the interviews; although these were to some extent beyond the issues meant to answer the research question, they seem relevant to mention here.

One aspect that somewhat regularly seemed to be addressed was physical planning. The reason for this to keep reappearing, seemed to be the difficulty in drawing a distinctive boundary between the somewhat softer structures of visions, networks, and leadership, and their relation to physical planning in reality. The context in which these aspects of physical planning kept appearing was not the location of some specific area or structure, but rather in terms of municipal comprehensive plans, and the ways in which efforts were taken to enhance the coordination of these. These discussions did however vary
quite a lot regarding how this work was progressing on a regional basis. The following quotes are intended to give a picture of these different views.

“It is progressing quite well, there is consensus about the need for coordinated physical planning. In the new regional development plan, we have put forth some recommendations with regards to a coordinated comprehensive plan, however the municipalities have requested that we should take larger steps regarding these issues, that an actual regional comprehensive plan should be made. They (municipalities) put forth demands, hopes, wishes that we have not yet dared to take on with respect to the municipal planning monopoly. (Reg. Dir. Östsam)”

“We (regional association) did notice that when the development strategy became a physical reality, in form of a regional comprehensive plan, the reactions were stronger, even though this was what everyone already agreed on in the common work with the strategy. This was quite evident when the strategy became physical. The idea is still that the municipalities are the ones to handle the comprehensive planning, they still own the question so to speak. But the process of agreeing on it, the discussions about it, took longer to settle. (Dvpmt Mngr Ö)”

The above quotes show what seems to be either a difference in strategy of implementation of a regional comprehensive plan, or an insecurity from the municipalities’ side with regards to the balance between their municipal planning monopoly, and the need to coordinate these plans under regional leadership. In this case it might not be an easy answer of either/or, but more likely a little bit of both. The first impression seems to indicate that the regional association of Östergötland has taken a more cautious path, while in Örebro, the regional association has integrated such a physical plan into the wider strategy, a more hands-on approach, but perhaps not without complications. However, when disregarding the actual paths of implementation, there seems to be somewhat of a consensus about the importance of coordinating the physical plans.

“It is a work in progress. We have common meetings about comprehensive planning, I really feel we are starting to come quite far with these aspects...everyone is starting to realize that to handle these things, we need collective thinking around this. It really concerns every single area, and when one starts thinking about it, one realizes the need for cooperation. Then again, there are not any clear or obvious frameworks about how this is supposed to be handled in practice. (Frm T&I Dvpmt Hallsberg)“

“I guess it would depend on what the mandates were for such a regional plan, if we are to have a plan that is not legally binding, but could show some guidance also about what type of lobbying there is supposed to be at the regional level. What are the most important aspects for the region? In that case it would just seem sound to integrate something more like a physical regional plan, then all the municipalities could have a discussion around this, I think that would be a great tool (Mun.Arch. Åtv).”

It is difficult to draw any clear conclusions with regards to the issue of regional comprehensive plans. On one hand, there seems to be an acknowledgement that more
cooperation or coordination is needed in this regard. On the other hand, when it comes
down to the practicalities, it seems that the question of the municipal planning
monopoly is still a very sensitive one.
7. Conclusions
To conclude and summarize the findings of this paper, one needs to first revisit the three issues that were initially established for the purpose of exploring the main research aim. In this following section, these three issues will be discussed individually in terms of the related findings. At the end of this section, the main aim of the paper will once again be brought forth, with the intention of summarizing the results.

The first of the three issues examined was: the municipal and regional visions, plans and policies, and the extent to which they implicitly or explicitly relate to an innovation systems framework. Based on the results of this paper, it seems that in general the regional development strategies do have a very clear, although not explicitly stated, RIS framework embedded in them. The fact that they have a clear relationship with the RIS framework can be spotted in many aspects. Not only is there a clear systems approach to the strategies, the creation of milieus, an emphasis on networking, and cooperation between the many different actors, but there is also a clear emphasis on entrepreneurship, skills provision, research, and innovation. All these aspects, together with the clear policy transfer effect of strategies, lead to the conclusion that an RIS approach is the basis of these visions and strategies. What is however also interesting, is the rather abrupt ending to these clear links with an RIS approach as one examines the visions or strategies of the municipalities. Certainly there are still some aspects that relate, but the initial thought was that this would be much clearer on this level. Although the municipalities are integrated as a part of the region, and thus also have a significant influence on the creation of regional strategies, one would have thought that this would also show up in the strategies of each municipality as well.

The second issue examined was: the relationships and networks between governance, knowledge institutions, and business actors, and their role as part of an innovation system. In general, there seems to be a strong and expansive web of networks involving the three major actors distinguished. These networks seem to be of both informal and formal nature, with the actors being aware of the importance of both. What is perhaps the most unexpected aspect of this issue is the unclear role of the regional associations, where primarily municipal actors felt an ambiguity in the actual mandate these regional associations have. There also seemed to be somewhat of a discrepancy in what the role of the university was felt to be within the system. Despite this discrepancy, there is an unconditional awareness from all actors that the university is definitely an asset to the region, and needs to be used to a larger extent.

The third and final issue examined was: What possibilities/problems does the power distribution between EU, national, regional, and sub-regional levels raise in planning for regional innovation and growth strategies, considering that programs and strategies from all levels of governance need to be collectively implemented? This issue was perhaps the broadest of the three, and therefore perhaps also the most difficult to grasp. What was however most evident was that the problems of this multi-level governance system appear to clearly overshadow the possibilities. One of the main problems as
already mentioned in the discussion above, seemed to be the unclear mandate of the regional associations. This confusion was most evident for the municipal actors, but also to some extent within the organizations themselves. One example is the case of the comprehensive physical plan in Örebro region, where the regional association seemed assured that they had a mandate to implement this strategy, which was already accepted by the members, and therefore, by the municipalities. However when the strategy turned to actuality, this already-approved mandate seemed to somewhat vanish. This example is but one of the several instances where similar issues were discussed. Another quite evident problem in relation to this issue seems to be the non-existent national strategy, and the complexity of the web of support actors. This aspect is emphasized, throughout the different levels of governance, all the way from EU- to municipal- level. Not only do these problems seem to affect the understanding of the system itself, but also seems to damage the long-term perspective of the strategies through short-term, top-down, project based financing.

To conclude then, what can these insights add to the understanding of the general aim this study set out to explore? How do Swedish regions and municipalities conceptualize, integrate, and implement strategies and policies relating to a regional innovation systems framework? What has become apparent through the study is that these issues seems to differ quite distinctly, between the smaller municipalities studied, and the regions. The study has shown that the case municipalities have a somewhat narrower conceptualization of the innovation system than the regions. The municipalities mostly relate and delineate the system to skills provision. In this context it is however important to note that the municipalities studied are all rather small. The limited size of these municipalities might therefore influence the conceptualization of the innovation system. These small municipalities can neither exhibit the depth nor the width of the business structure, compared to that of an entire region or a larger municipality. With these aspects in mind, the narrower conceptualization demonstrated by the municipal actors might instead seem quite natural. The regional actors, on the other hand, have a broader and deeper understanding of the system. The regional strategies cannot be limited to saying that they integrate an RIS-framework, but the affected sections rather seem to based as a whole on this very approach. The municipalities however, although members of the regional associations, and thus indirectly integrate the RIS-framework into their strategies, can otherwise not be said to integrate this approach to any great extent in their own municipal visions or strategies.

Concerning the implementation of the strategies, the regions seem to have a general structure, with a substantial web of networks and organizations, which would seem to give them a basis for a successful innovation system. The main problems seem to lie beyond the reach of the regional actors themselves. The regional actors seem to try to take necessary steps to streamline, simplify, and coordinate actors and actions within the system, however from what is seen through this study, which is by no means exhaustive, there is a need for measures to be taken at the national level, both strategically and financially. Hopefully the implementation of a national strategy can be a first step in this direction. Concerning the above aspects however, it is hard to generalize the findings to any larger degree, for example to Sweden as a whole. The making and implementation of regional strategies lie in the hands of different actors in
different regions. In both of the case regions studied, these tasks are delegated to regional associations compiled of the county and all municipalities within the county. There are however different organizations in other part of the country that handle these tasks, for example, counties, or different constellations of regional associations. This study thus can only give insight in how these processes seem to be handled within these specific regional associations. Also the selection of these regions was based on the fact that they have the advantage of proximity to universities. Therefore within other regions without this advantage both the conceptualization of the innovation system, and the implementation of related strategies and policies might take different forms. However the issues and questions brought forth in the study can be relevant even in other settings.

In addition, one needs to critically examine the data sources used in the empirical analysis. The primary data collected through the interviews should in essence be both reliable and valid. There are however always concerns that semi-structured interviews might be subject to interviewee effects. The secondary data in the form of the different policy documents are harder to assess, but should be reliable and valid in the sense that they are relevant to the topic, and up to date. The major concern about to the policy documents, is the aspect of the national strategy, already mentioned. As previously stated caution has been taken in the analysis regarding this specific document, with primarily the official EU documents being focused on when drawing conclusions about the policy transfer effects.

Despite these limitations it seems that there are significant policy transfer effects from the general strategies and policies of the EU, into the strategies and policies of the lower level governance structures of the specific cases studied. These effects however, seem to diminish gradually as the geographical space in which these strategies and policies apply to, decrease, and the contextual setting becomes increasingly differentiated and specific. These general results seem to be in line with the recent theoretical debate, that these types of strategies and policies need to relate to, and be built on the specific assets of the locality. Moreover, the small municipalities studied do not seem to have the capability, in their own right, to develop constructed advantages through differentiated knowledge bases and related variety. The functioning of the system on the regional level, general structure, cooperation networks, and coordinated activities seem essential, to avoid uneven development, especially for these peripheral economies.
8. Reference list


Asheim, B. et.al 2012a, Constructed Regional Advantages: Platform Policies Based on Related Variety and Differentiated Knowledge Bases, Regional Studies, vol 45 no 7 page 893-904

Asheim, B. et.al 2012b, Regional Innovation Systems: Theory, Empirics and Policy, Regional Studies, vol 45 no 7 page 875-891

Boucher, G. et.al 2003, Tiers of Engagement by Universities in their Region’s Development, Regional Studies, vol 37 no 9 page 887-897


Charles, D. 2006, Universities as key knowledge infrastructure in regional innovation systems, Innovation vol 19, no 1, page 117-130


Cooke, P. 2007, To construct regional advantage from innovation systems first build policy platforms, European Planning Studies, vol 15 no 2 page 179-194

Dixon-Woods 2011, Using framework-based synthesis for conducting reviews of qualitative studies, BMC Medicin, vol 9 no 39 page 39

Doloreux, D. 2002, What we should know about regional systems of innovation, Technology in Society 24 page 243-263


Domar, E.D., 1946, Capital Expansion, Rate of Growth, and Employment, *Econometrica, vol 14, no 2, page 137-147*


Hägerstrand 1967, *innovation Diffusion as a Spatial Process,* translated by Pred, A. University of Chicago Press, Chicago USA


Nationalencyklopedin 2012, [www.ne.se](http://www.ne.se), May 13th 2012


Palesh, M. 2010 “We noticed that suddenly the country has become full of MRI”. Policy makers’ views on diffusion and use of health technologies in Iran. *Health Research Policy and Systems* 8:9

Regional Association Örebro 2011, Utvecklingsstrategi för Örebroregionen, *Regionsförbundet Örebro*

Ricardo D. 1903, *Principles of political economy and taxation*, George Bell, London, UK


Söderköping municipality 2009, Söderköping vision 2020, *Söderköping municipality*

Tillväxtverket 2012, [www.tillvaxtverket.se](http://www.tillvaxtverket.se), February 15th 2012


Yin 1984, *Case study research: Design and method*. Sage, Beverly Hills, USA.

Åtvidaberg municipality 2012, [www.atvidaberg.se](http://www.atvidaberg.se), <http://www.atvidaberg.se/politikdemokrati/vision.4.29e1ab7a12a7a73f7d080033677.html>, April 27th 2012

Östsam 2011, Regionalt Utvecklingsprogram >2030, * Regionsförbundet Östsam*
9. Appendix

Table 1. Örebro FA-region municipal ranking

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<thead>
<tr>
<th>Municipal</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lekeberg</td>
<td>28.8(1)</td>
<td>4.5(2)</td>
<td>-0.7(2)</td>
<td>11.8(2)</td>
<td>3.5(4)</td>
<td>15.71</td>
</tr>
<tr>
<td>Laxå</td>
<td>-43.5(6)</td>
<td>2.9(6)</td>
<td>11.1(7)</td>
<td>6.3(7)</td>
<td>5.4(1)</td>
<td>38.57</td>
</tr>
<tr>
<td>Hallsberg</td>
<td>-23.1(3)</td>
<td>3(5)</td>
<td>-8.9(6)</td>
<td>8.5(6)</td>
<td>3.3(6)</td>
<td>37.14</td>
</tr>
<tr>
<td>Kumla</td>
<td>-66.1(7)</td>
<td>5(1)</td>
<td>-4.9(5)</td>
<td>10.3(3)</td>
<td>3.4(5)</td>
<td>30</td>
</tr>
<tr>
<td>Askersund</td>
<td>-26.9(5)</td>
<td>3.7(3)</td>
<td>3(1)</td>
<td>9.3(5)</td>
<td>4.6(2)</td>
<td>22.86</td>
</tr>
<tr>
<td>Nora</td>
<td>-7.3(2)</td>
<td>3.5(4)</td>
<td>-1.1(3)</td>
<td>12.9(1)</td>
<td>4.6(2)</td>
<td>17.14</td>
</tr>
<tr>
<td>Lindeberg</td>
<td>-24.4(4)</td>
<td>2.8(7)</td>
<td>-3.6(4)</td>
<td>10.2(4)</td>
<td>3.3(6)</td>
<td>35.71</td>
</tr>
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</table>

Table 2 Östergötland FA-region municipal ranking

<table>
<thead>
<tr>
<th>Municipal</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kinda</td>
<td>-3.5(5)</td>
<td>3.6(3)</td>
<td>-6.1(7)</td>
<td>11.4(3)</td>
<td>4.0(5)</td>
<td>23</td>
</tr>
<tr>
<td>Åtvidaberg</td>
<td>-27.5(7)</td>
<td>3.5(7)</td>
<td>-8.6(8)</td>
<td>9.3(7)</td>
<td>4.2(4)</td>
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</tr>
<tr>
<td>Finspång</td>
<td>-61.8(10)</td>
<td>3.6(3)</td>
<td>3.1(1)</td>
<td>10.5(6)</td>
<td>3.9(1)</td>
<td>29</td>
</tr>
<tr>
<td>Valdemarsvik</td>
<td>7.8(1)</td>
<td>2.7(10)</td>
<td>-10.3(10)</td>
<td>8.5(10)</td>
<td>4.3(3)</td>
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</tr>
<tr>
<td>Söderköping</td>
<td>-0.7(4)</td>
<td>4.2(2)</td>
<td>1.6(4)</td>
<td>12.6(2)</td>
<td>5.5(2)</td>
<td>14</td>
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<tr>
<td>Ödeshög</td>
<td>2.3(3)</td>
<td>3.1(9)</td>
<td>2.4(3)</td>
<td>8.6(9)</td>
<td>3.9(7)</td>
<td>31</td>
</tr>
<tr>
<td>Boxholm</td>
<td>-33.9(9)</td>
<td>3.6(3)</td>
<td>-3.6(6)</td>
<td>7.3(8)</td>
<td>3(9)</td>
<td>35</td>
</tr>
<tr>
<td>Mjölby</td>
<td>-31.2(8)</td>
<td>4.7(1)</td>
<td>1.5(5)</td>
<td>10.8(4)</td>
<td>3.7(8)</td>
<td>26</td>
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<td>Motala</td>
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<td>3.6(3)</td>
<td>-8.7(9)</td>
<td>10.7(5)</td>
<td>4(5)</td>
<td>28</td>
</tr>
<tr>
<td>Vadstena</td>
<td>7.7(2)</td>
<td>3.3(8)</td>
<td>3.1(1)</td>
<td>14.3(1)</td>
<td>5.8(1)</td>
<td>13</td>
</tr>
</tbody>
</table>

Table 1 and 2 show the ranking done during the selection of the case municipalities. The following five economic key figures represent the numbers in the top row. The final column in each row shows the total rank. This rank is calculated by adding all rankings from each key figure (shown as number in parenthesis) for each municipality. This sum is then divided by the number of municipalities in each region, and then multiplied by ten.

1. Municipal revenue growth percentage (based on all VAT subjected activities) 2005-2010
2. Total municipal payroll development percentage 2005-2010
3. Employment development percentage of municipal daytime population 2004-2009
4. Percentage of population with at least a three year university or college degree 2010
5. Yearly average of new businesses start-ups per thousand inhabitants 2006-2010