Regional Development Platform Method (RDPM) as a Tool for Regional Innovation Policy

VESAA HARMAAKORPI
Lappeenranta University of Technology, Lahti Unit, Finland

[Received November 2004; accepted March 2005]

ABSTRACT Regional development strategies should be based on the sound assessment of regional resources, as well as on forming dynamic capabilities aiming to develop the resource configurations in order to form regional competitive advantage. In this study, the concept “regional development platform” is used as a tool for assessing the regional potentials on which sustainable, competitive advantage could be built. The Regional Development Platform Method (RDPM) is presented as a tool for designing and managing a regional innovation system. It consists of eight phases, in which the underlying potential in the region is explored and the exploitation of the potential organized. The experiences gained from applying the RDPM in the Lahti region, Finland, are used to illustrate the article.

Introduction

Background

Innovations are widely seen as the driving force of economic growth and competitiveness. The recent discussions about developing competitiveness deal with innovation systems. Depending on their context, they can be called “national innovation systems” (cf. Freeman, 1987; Lundvall, 1992; Nelson, 1993), “regional innovation systems” (cf. Cooke et al., 1997; Doloreux, 2002) or “sectoral innovation systems” (cf. Breschi & Malerba, 1997; Malerba, 2002). Confessing the importance of national and sectoral levels of innovation systems, this present study focuses on the concept of a regional innovation system in the further steps of the study.

The theory of regional innovation systems is indebted to the evolutionary theory of technical change (Moulaert & Sekia, 2003). The regional innovation system can be understood to be a regional system “in which firms and other organizations are systematically engaged
in interactive learning through an institutional milieu characterized by embeddedness” (Cooke et al., 1998) or “a system of innovative networks and institutions located within a certain geographic area, with regular and strong internal interaction that promotes the innovativeness of the region’s companies” (Kostiainen, 2002, p. 80). Doloreux (2002) emphasizes three aspects in the definition of regional innovation system, namely the expression “interactive learning”, the term “milieu” and the concept of “embeddedness”. Furthermore, he defines firms, institutions, knowledge structures and holistic innovation policies which are the main elements comprising a regional innovation system.

The regional innovation system consists of different innovation networks aiming at increasing the innovativeness of the regional innovation environment. These networks have many different forms being defined by, for example, the origin, size, structure and objective of the networks. However, some typical characteristics can be stated that most regional innovation networks fulfil. Regional innovation networks are often formed from a heterogeneous group of actors including representatives of firms, universities, technology centres, and development organizations. Usually, the networks have been able to create a common vision and goals towards which they are striving.

Since regional innovation networks are defined as loose multi-actor networks composed of many different actors, particular attention must be given to the relationships in the networks. In this context, the critical question is how it is possible to create a trusting atmosphere in the network, in order to achieve positive externalities in the interactive and joint learning processes. This leads to how social cohesion and creative social capital could be promoted in the innovation networks (see Tura & Harmaakorpi, 2005; Harmaakorpi, 2004). Since the innovation processes are highly cooperative, the actors of the innovation network “need to develop a common language and modes of interpretation and, above all, trust in order to overcome some of the uncertainties characterizing the innovation process” (Lundvall & Borrás, 1999). This point of view takes one near to building a common knowledge management system for the innovation network and sets one thinking about how and what kind of information to transmit in the network (Harmaakorpi & Melkas, 2005). An important question is also how to process information between the innovation network and the outside world. In this connection, the main issue is to assess the absorptive capacity of the innovation network (Cohen & Levinthal, 1990).

The rapid techno-economic development, systemic and complex nature of innovation systems and multi-level networked development environment (see Harmaakorpi, 2004) place special demands on innovation policy activities. Innovation policies and strategies are designed and implemented in an environment, where different actors and coalitions are striving to further their interests, where there is always a great risk of lock-ins because of the natural socio-institutional inertia caused by the shift in techno-economic paradigm. Such an environment is crying out for innovation policy tools that foster the visionary, leadership, networking and learning activities in the process of designing and implementing innovation policies and strategies.

Objectives and Research Methodology of Study

The objective of the present study is to develop and conceptualize an innovation policy tool for designing and running regional innovation systems in order to increase sustainable regional competitiveness.
Under the circumstances described constructive action research based on depth-inside case analysis was seen as a justifiable method for the present study. This set-up started a learning loop including intensive phases of practical work and theoretical assessment. The method used was close to the “science by doing” approach, where practice, theory and a long practical follow-up create new, personally experienced, tested and interpreted knowledge (Sydänmaanlakka, 2003).

Resource-based View on Regional Development—Towards Regional Dynamic Capabilities

Regions are strongly dependent on their history in seeking new trajectories for future prosperity. The current position of a region is a result of the paths and trajectories it has travelled. Therefore, path dependency has to be considered one of the basic elements in regional development (Maskell & Malmberg, 1999). This follows because learning tends to be local. That is, opportunities for learning will be “close in” to previous activities and, thus, will be transaction and production specific (Teece, 1988). It is impossible to build any kind of sustainable regional strategies without a thorough assessment of regional assets and resource configurations (Teece et al., 1997; Scott, 2000; Harmaakorpi & Pekkarinen, 2003).

Thus, competitive advantage is based on resource configurations, but these resource configurations have to be renewed over time in order to keep them competitive. The framework of dynamic capabilities (see e.g. Teece et al., 1997; Eisenhardt & Martin, 2000) focuses on these processes aiming to renew the resource configurations over time. The framework has its origin in the resource-based view of strategic management. According to the resource-based view, a sustainable competitive advantage is mainly based on valuable, rare, inimitable and non-substitutable resources. At the company level, dynamic capabilities are defined as “the firm’s processes that use resources—specially the processes that integrate, reconfigure, gain and release resources—to match and even create market change. Dynamic capabilities thus are the organizational and strategic routines by which firms achieve new resource configurations as markets emerge, collide, split, evolve and die” (Eisenhardt & Martin, 2000, p. 1107).

At the regional level, we define dynamic capabilities as the region’s ability to generate in interaction competitive resource configurations in a turbulent environment. Dynamic capabilities aim to reform regional resource configurations based on the history of the region and opportunities emerging from the techno-socio-economic development. Inside the scope of this present paper, focus is on five dynamic capabilities considered to be important in a networked regional innovation environment: (i) innovative capability, (ii) learning capability, (iii) networking capability, (iv) leadership capability and (v) visionary capability.

The term innovative capability is associated with the capability of the organization to sense the changes taking place outside and to exploit their existing resources and competencies so that innovation activities can create a competitive edge for the organization. Regional innovative capability means the joint innovation capability of the enterprises and other organizations of the region. So, it is made up of the innovation capability of not only individual actors, but also of the entire innovation network, which at best can be much more than just the sum of its parts. This analysis emphasizes the importance of innovative capability in renewing the regional resource base, as well as being a facilitator of commercial innovations. Consequently, the aggregate regional innovative
capability is defined as a regional innovation system’s ability to exploit and renew existing resource configurations in order to create a sustainable competitive advantage by innovation activities.

Interactive and collective learning are emphasized in non-linear innovation processes. Collective learning is a process of dynamic and cumulative knowledge creation, which has many synergic advantages due to its interactive character (Camagni, 1995). Synergic advantages emerge because of knowledge spillovers and increasing trust in the collective learning process. In accordance, Lundvall and Borrás define the learning economy as “an economy, where the ability to learn is decisive for the economic success of individuals, firms, regions and nations. Learning, in this context, does not just refer to the acquisition of information or access to the sources of information, but also to the development of new areas of competence and new skills” (1999, p. 29). Following the teachings considering the concepts of learning economy and learning regions, regional learning capability can be defined as a regional innovation system’s ability to create and manage knowledge in a collective, interactive and cumulative learning process leading to new settings of resources, competences and skills.

Networking is defined to be the hegemonic way of organization in today’s world (Ollus et al., 1998). In a turbulent world, some of the key words are flexibility and specialization. Network-like organizations seem often to be more effective than hierarchical organizations (cf. Castells, 1996). As Sotarauta (1999, pp. 104–105) suggests, the actors of the network could have different motives for their cooperation: the network could be seen as a channel, a way to minimize expenses, or as a strategic tool. The decisive success factor in these networks is the actors’ ability to interact leading to considerations about social capital in the networked environment (Tura & Harmaakorpi, 2003). The essential features of the network are the distribution of knowledge and continuous learning from the other actors of the network. Regional networking capability can be defined as the regional innovation system’s ability to build interactive networks including field-specific creative social capital leading to effective utilization of the resource configurations in the networks.

Understanding the opportunities given by path dependencies is one side of the coin, the other is to try to break free of the damaging effects path dependency has in seeking new potential trajectories for regional development. Path dependency can lead to lock-ins preventing the desired development processes. Grabher (1993) has defined three different kinds of lock-ins in a regional context: (i) functional lock-ins, (ii) cognitive lock-ins and (iii) political lock-ins. The role of leadership becomes decisive when preventing these lock-ins and trying to find new paths out of lock-in situations (Kotter, 1988; Sotarauta, 1999). Leadership capability in a networked regional development environment can be defined as a regional innovation system’s ability to effectuate actions steering the processes and resources of the system in the desired direction and avoiding harmful lock-ins.

The world economy meets shifts in the techno-economic paradigm in certain cycles caused by leaps in technological development and even inside a cycle the business environment can be turbulent. The success of economic actors is strongly related to their adaptability to the emerging techno-economic environment. The competitiveness of these actors is based on their socio-economic starting point and their adjustment capacity on the changing techno-economic and socio-institutional paradigms (Schienstock & Hämäläinen, 2001, citing Abramowitz, 1995; Lipsey, 1997). The regions are strongly dependent on their past and have to continuously make new decisions whilst insecure.
This insecurity can be reduced using resource-based futures research and visionary capability. In this context, visionary capability refers to a regional innovation system’s ability to outline the possible potential development trajectories based on paths travelled and utilizing the opportunities emerging by the changing techno-economic paradigm.

Thus, the competitive advantage of a region greatly depends on its visionary, innovation, learning, networking and leadership processes, shaped by its (specific) asset position, and the paths available to it (cf. Teece et al., 1997). The processes should lead to building regional capabilities, competences and core competences based on regional resources, in order to enhance a sustainable competitive advantage (cf. Prahalad & Hamel, 1990; Javidan, 1998; Teece et al., 1997; Sotarauta, 2000).

**Regional Development Platform Method (RDPM)**

*Concept of Regional Development Platform*

One important aspect affecting the forms of regional innovation systems is agglomeration economies (see e.g. Marshall, 1916; Christaller, 1933; Lösch, 1954; Kaldor, 1970; Henderson, 1985). There are some conceptual approaches based on the positive externalities achieved by agglomerations and networking. The phenomena can be assessed at least by the following approaches: (i) industry approach, (ii) cluster approach (see e.g. Porter, 1990, 1998), (iii) technology regime (or trajectory) approach (see e.g. Nelson & Winter, 1982; Dosi, 1988; Carlsson, 1995) and (iv) development block approach (see Dahmén, 1988).

The regional development platform approach has somewhat different characteristics from the previous approaches. It has its intellectual roots in the frameworks of regional innovation systems and evolutionary economics. It is strongly bound to the institutional set-up of a region and can, therefore, be a useful tool in exploring existing business potentials in manifold regional resource configurations. The concept of regional development platforms is related to the concept of cluster. However, regional development platforms aim to describe the potentials to form future regional clusters of the existing resource basis rather than describe existing clusters. Regional development platforms can be defined as regional resource configurations based on the past development trajectories but presenting the future potential to produce competitive advantage existing in the defined resource configurations. The possible competitive advantage is based on the business potential of the actors working for the platform. The actors of a regional development platform are the firms, technology centres, expertise centres, research centres, education organizations, etc. contributing to the defined development platform. A regional development platform must be separately defined each time. A development platform is often based on an industry, area of expertise or future megatrend or combination of those. A development platform is connected with the past trajectories, but the concept describes the future potential of the platform. Technological development may create totally new platforms. However, they are usually based on the work done on the existing platforms.

*Conceptual Framework of the RDPM*

When planning the sunrise regional innovation strategies and policies, and the tools helping the regional innovation system to improve, the following aspects should be emphasized: (i) understanding the effects of the changing techno-economic-paradigm on
the regional innovation environment (ii) understanding the phenomena of regional path-dependency and agglomeration, (iii) avoiding regional lock-ins, (iv) defining competitive regional resource configurations, (v) forming multi-actor innovation networks to exploit the resource configurations, (vi) enhancing the absorptive capacity of the innovation networks, (vii) creating sufficient creative social capital, (viii) promoting regional dynamic capabilities, for example, innovative, learning, networking, leadership and forecasting capabilities and (ix) understanding the multi-level governance environment in forming innovation policies and strategies.

The future innovation and technology strategies should be created on the regional strengths and potentials (Scott, 2000, p. 116). In this present paper, the Regional Development Platform Method (RDPM) is presented as an institutional innovation for a regional innovation policy. The method helps to look for regional business potentials on which it is possible to build the future competitive advantage of a region. The dominating idea of developing the RDPM has been the importance of the individual regional development paths in designing development strategies. An essential part of the method is the so-called core process thinking, which is designed to form innovation networks aiming at exploiting the business potentials existing in the regional development platforms. Moreover, the RDPM can be seen as a network leadership tool helping the regional actors to interact during the development process and helping to promote social capital and dynamic capabilities in a region.

In Figure 1, the principle of industries and areas of expertise forming resource configurations in the RDPM is presented. Areas of expertise are formed by skills, capabilities and competencies supposed to be important independent of industry. Industries are marked in the columns and the areas of expertise chosen for each individual study are marked in the rows. The RDPM aims to define business potentials able to give the regional competitive advantage of the industries, areas of expertise and especially of their combinations.

Some central criteria occur when assessing different industries as part of a regional development platform system. They help to evaluate the industries’ potential for the region. These criteria are, for example: the growth potential of the industry, the quantity, quality and structure of the industry, internationalization of the industry, the innovativeness of the industry, the ability of the management in the industry, the quantity of the research conducted in the
region, the quantity and quality of the education given in the region and the ability of the technology transfer organizations in the region. The following criteria can be used when assessing the areas of expertise in the region: the quantity and quality of the knowledge intensive business services (KIBS), the innovative capability of the expertise, the interregional networks of the expertise, the quantity and quality of the education given in the region and the ability of the technology transfer organizations in the region. As social capital can be seen as an increasingly important regional resource (see Tura & Harmakorpi, 2003), the assessment of it in different regional development platforms should also be included in an advanced analysis.

The RDPM consists of eight phases: (i) analysis of the changing techno-economic paradigm and benchmarking through the assessment of regional innovation system theories and conventions, (ii) background study of the industries and areas of expertise in the region, (iii) expert panels, (iv) assessment of future scenarios, (v) definition of potential development platforms, (vi) conceptualization of the regional innovation system, (vii) search of the core processes of the regional innovation system and (viii) definition of knowledge creation and management system.

**Phases of the RDPM**

Business is adaptation, even at the regional level. Therefore, it is essential to understand how the surrounding world is changing. The roles and positions of a region and its actors are constantly changing providing opportunities for new future paths: a region must be sensitive to those changes. Therefore, one cannot overstress the comprehension of the changing techno-economic paradigm. It is also important to learn from the past, compare what has been done in other regions, and try to do some benchmarking. Even though each region is an individual case, it is worth trying to find which practices might best suit one’s own region. A study of the mainstream theories and conventions of the regional innovation system gives a good basis for assessment of best practices. This first phase of the RDPM should be effectuated in interaction between the designers and the main players of the innovation system in order to form a sufficiently shared vision and shared goals, or social capital, for the development network.

The background study of the industries and areas of expertise gives an idea of where the region currently stands. The main information source is the statistical data available. Supplementary information can be obtained, for example, from various reports and analyses. It is important to compare the information on one’s own region with that of other regions to be able to get an idea of how the region is doing in competing with other regions.

Further on, there is often much tacit knowledge about the resource configurations in the region. Tacit knowledge cannot be found in the statistics or reports, for example. Therefore, it is valuable to organize expert panels to obtain the “hidden” information. Such a panel can be organized by inviting groups that have a broad overview of the business life in the region. However, this phase is not just important for finding the tacit knowledge of the regional resource configurations. Its meaning is as important for regional collective learning, networking and building of social capital and shared vision. This phase provides a good basis for the later interactive visionary contemplations.

The rapid technological development in the innovation-driven society is constantly changing the regional business environment. Old technologies and methods are dying and new ones springing up. Therefore, it is essential to look at the future. Some potential
resource configurations for the region, according to the statistical information, could be in great difficulty under the future technological trajectories. However, some seemingly weak platforms could provide a good basis for prosperity in the future taking into account the opportunities of some new technologies. Each of the studied megatrends should be reflected in the regional entrepreneurial activity and the resource base of the regional innovation system in order to create new paths bringing regional competitive advantage. This phase should be effectuated in interaction between the main actors of a region using, for example, futures research methods, like the Delphi method (see, e.g. Masini, 1993; Webler et al., 1991; Woudenberg, 1991). Conducting futures research as an interactive process increases the regional visionary capability remarkably (Harmaakorpi & Uotila, 2006).

The fifth phase is to define the potential development platforms in the region. It is based on the statistical and empirical information including the futures research results. The analysis is concerned with comparing the statistical data with the empirical data gathered by the expert panels to see if the statistically promising industries also seem to have potential from the point of view of the panellists. The most challenging part of the process is to find promising combinations of industries and areas of expertise while taking into account the opportunities offered by the visible technological development. The aim is to find the most fruitful regional development platforms where the scarce resources are put to good use in order to create regional prosperity. The view in this present study is, however, very Porterian in the way that all the possible development platforms should be promoted and the markets should perform the task of choosing, which ones survive and prosper (Porter, 1998). However, the scarcity of regional resources sets, in practice, strong limitations on regional innovation policies forcing them to prioritize the development incentives.

The sixth phase aims to conceptualize the regional innovation system. The concept of the regional innovation system is often fuzzy among the regional decision-makers and developers disabling a proper communication of the developed subject. This phase is important in building a certain level of shared understanding of the environment where innovation policies are conducted. The fuzziness of the understanding of the regional system often leads to decreasing social capital making it impossible for regional dynamic capabilities to evolve. A shared vision is especially important due to the actual programme and process-based development environment, where manifold strategies and programmes simultaneously affect the regional development environment. The roles of the players, strategies and programmes should be defined at least at a general level. This phase could be called the “institutional resource configuration”. The institutional framework created is important in both intraregional and interregional communication.

The seventh phase of the RDPM is the definition of the core processes. The core processes of the regional innovation system are defined as processes aiming at exploiting the potential existing in the defined development platforms and enhancing dynamic capabilities and creative social capital in a region. The aim is to create and develop regional core competencies bringing sustainable, competitive advantage to a region. The core processes are based on the identified potential development platforms in a region. They can also include some phenomenon or future megatrend seeming to bring business opportunities for the companies in the region. They must be defined by the main actors of the region, and the actors must also be willing to invest resources to develop the core process. The core processes include thematic or sectoral regional innovation networks where the central objective is collective learning.
The core processes must fulfill certain conditions: (i) important regional enterprises must be among the exploiters of core processes, (ii) the core process must be able to create new business activity, (iii) there must be strong enough actors for each sector of the core process, (iv) it must be possible to name responsible organizations and people for each sector of the core process, (v) the actors of the core process should be able to agree on common goals and a course of action, (vi) the actors of the core process should be able to name a credible “owner” for the process.

The role of the core process thinking is absolutely central in the RDPM. It lays the real foundation for the concrete actions in running the regional innovation systems after the most potential regional development platforms are defined. The potential regional development platforms based on the core processes as new institutions make it possible to prevent and unlock the possible lock-ins, as well as lead the way to new regional paths. The aim is also to create innovation networks with enough critical mass allowing the benefits of agglomeration to take place.

In Figure 2, a principle of a core process formed by a combination of industries, areas of expertise, and future megatrends is described.

Clustering and networking are important factors in creating a regional competitive advantage. However, “both concepts, clusters and networks, describe important organizational aspects that are closer to the issue of infrastructure than to the issue of innovation. The proximity of various companies does not itself yield innovative results. Nor does communication frequency between companies contained in vast networks guarantee innovation. Both concepts lack the sound foundation of the underlying resource: knowledge” (Nonaka & Reinmölle, 1998, p. 407). Thus, learning and knowledge are the driving forces of innovations leading to the competitive advantage of regions. The questions of learning and knowledge creation are too important to be left to occur spontaneously. According to Nonaka and Reinmölle (1998), in order to design knowledge-creating

Figure 2. Principle description of a core process
areas, all the processes, by which knowledge is converted, need to be supported within the region. Therefore, special attention should be directed at knowledge creation and management at the regional level. That task is fulfilled in the last phase of the RDPM.

**Experiences of Using the RDPM in the Lahti Region, Finland**

*The Lahti Region*

The Lahti region is situated in southern Finland, about 100 km from the capital, Helsinki. It has about 200,000 inhabitants, or about 4% of the total Finnish population. The geographical and functional centre of the Lahti region is the city of Lahti with about 98,000 inhabitants, making it the seventh largest city in Finland. The region comprises 12 municipalities. In the Lahti region, the population and industries, especially manufacturing, are concentrated around the cities of Lahti and Heinola. The rest of the region is characteristically rural and sparsely populated.

By the end of the 1990s, it had become quite clear in the Lahti region that the region was having difficulty transforming itself from the industrial era to the information era. Since the collapse of the national economy at the beginning of the 1990s, the unemployment rate, in particular, has remained very high. Nor has industrial modernization been sufficiently successful. Even though Lahti is only 100 km from Helsinki, which is one of the most dynamic economic centres in Europe, it has been unable to create enough employment in the knowledge-intensive sectors in the area.

Among the main problems in the Lahti region are the scarcity of highly educated people and the exceptionally low research and development spending in the region. Tertiary enrolment in education in the region was 38% of the age group in 2000. The average in Finland was 66%. In the Lahti region, research and development expenditure was less than 1% of the Finnish total when the Lahti region’s population was about 4% of the national population. In 2000, the research and development spending in the Lahti region was about 280 euros per person, while Finland’s average was about 890 euros per person. The low contribution to education and research hinders business development in the Lahti region.

It was clear that the Lahti region lacked what was needed to produce science-based innovations as the source of regional competitiveness, productivity and economic growth. There was a clear need for the new development tools and new socio-institutional arrangements so as to create new paths for regional development.

**Exploring the Resource Configurations for Regional Competitive Advantage**

The first six phases of the RDPM were implemented in the Lahti region in winter 2001–2002. An assessment of regional innovation system theories and conventions was made, and then all the possible statistical and qualitative information concerning the industries and areas of expertise in the Lahti region was gathered.

In the third phase, three expert panels were organized with a total of 30 participants. The panellists were experts of different fields in the technology transfer and development organizations, as well as research and education units in the region. The idea was to assess the current situation of the industries, as well as the areas of expertise and the conditions they would offer for regional development. The panels were given four tables, each with two dimensions. Firstly, the panellists were asked to grade each industry and area of
expertise from 1–10 according to each criterion: (i) amount of entrepreneurial activity and employment capacity, (ii) growth potential, (iii) balance of the entrepreneurial structure, (iv) internationality of entrepreneurial activity, (v) innovativeness of entrepreneurial activity, (vi) value added/know-how intensity of entrepreneurial activity, (vii) capability of the leadership of the top enterprises, (viii) regional adequacy of educational opportunities, (ix) regional research input and (x) regional technology transfer activities.

On the basis of the point averages for the different criteria given by the panellists, the plastics industry (7.72) and the machine and metal products industry (7.22) proved to be among the most important industries, followed by the environmental industry and the furniture industry. The average scores given for each industry are depicted in Figure 3.

Secondly, the different areas of expertise were assessed. Expertise in this study is defined as expertise independent of the different industries, which is necessary or essential for many industries. The criteria for assessing the areas of expertise were: (i) quantity and quality of entrepreneurial activity (KIBS), (ii) regional pioneering quality/innovativeness in the area of expertise, (iii) regional and interregional networking in the area of expertise, (iv) regional adequacy of educational opportunities, (v) regional technology transfer activities.

Among the areas of expertise, the top scores were received by design (average 7.40) and environmental technology and ecology (7.07). The areas of expertise of quality and mechatronics were almost 6.5 points, with the regional adequacy of the educational opportunities again being considered the most important strength. The average scores given for each area of expertise are depicted in Figure 4.

**Figure 3.** Points averages for the various industries in 10 different categories
Thirdly, after the industries and areas of expertise had been assessed on the basis of different criteria, the panellists evaluated the importance of the industries and areas of expertise to each other. Fourthly, the panellists compared the different industries with each other evaluating the mutual significance of the regional industries (for more details see Harmaakorpi & Pekkarinen, 2002).

The analysis of the statistical and empirical information was concerned with comparing the statistical data with the empirical data gathered at the expert panels. The regional statistical data of every industry was compared with the national data. The available statistical data consisted of the number of industrial units and personnel and the values of production and export in each industry in the Lahti region and nationwide. The study indicates that according to both the statistical and empirical information, the plastics, furniture and mechanical wood products industries are above the median. Textiles and clothing are statistically above the median and empirically on the median level. Construction, electronics, as well as food products and beverages, are both statistically and empirically below the median. In the media industry, it is interesting to see that statistically it is below the median but the panelists valued it above the median. Machine and metal products are statistically on the same level as the median, and above the median according to the panellists. It is perhaps slightly surprising that the food products and beverages industry is both statistically and empirically below the median, as there are notable companies in this industry in the Lahti region.

The results of the analysis were assessed through some visible megatrends and some interesting potential resource configurations could be found. The most important potentials might be found in the combinations of the “star” industries and areas of expertise combined with a justified view of the future techno-economic development. Interesting combinations in the case of the Lahti region are seen, for example: the plastics industry combined with design and environment expertise and the visible development in material technology, furniture industry combined with design expertise and ageing of people, machine and metal products industry combined with mechatronics and quality expertise.
and development in nanotechnology, etc. There are a number of promising combinations whose development could be helped by promoting the existing or emerging innovation networks in the defined development platforms. The crucial fact in the successful development of the platforms, however, is the ability to form creative social capital in the multi-actor networks.

Following the analysis of the regional development platforms, the regional innovation system was conceptualized. The created conceptualization of the regional innovation system is depicted in Figure 5.

**Defining the Core Processes. Case: The Age Business Core Process**

After exploring the potential development platforms, the core processes to exploit the potential in the platforms were defined. In the Lahti region, a total of 13 core processes were founded (see Harmaakorpi et al., 2003). In this study, the definition process of the so-called “age business core process” is used as a case example.

The definition of the age business core process was conducted through a thorough analysis of the potential resources in the region (see more about the definition of age business core process, Pekkarinen & Harmaakorpi, 2006). According to the studies, the age business core process seems like a potential core process in the Lahti region. This is supported especially by taking the wellbeing industry as the core of the Regional Development Centre Programme in the region. This creates the basis for both intellectual and financial resourcing of the core process. Indeed, it is quite a natural solution that the

![Figure 5. The conceptualization of Lahti regional innovation system](image-url)
Regional Development Centre Programme, and, in practice, its director, are the owner of the age core process. The location of the Regional Development Centre Programme at the Neopoli Oy Corporation further supports this solution; Neopoli Oy is in charge of coordinating the Lahti region science park.

The core process was defined to be continuous and must create new business as a group action exploiting the ageing process of the population. The creation of business takes place, for instance, as a result of the emerging product development projects in the “star” industries. In the projects, there can be experts from different industries doing development work together for a new product or service. There can be, for example, a development project where a social worker, technology expert and marketing expert are designing a new product suitable for elderly people. Special attention also has to be paid to the enhancement of dynamic capabilities in the core process.

The central actors of the age business core process are presented in Figure 6.

The Knowledge Management System of the Age Business Core Process

The actors of the age business core process are continuously producing information needed to promote the age business in the Lahti region. Public research and educational organizations produce various reports containing valuable knowledge about ageing as a phenomenon and its consequences, as well as organize education to disseminate the knowledge achieved through the research. The public sector and private sector actors within the ageing sector gather experiences mostly by methods of learning-by-doing and learning-by-exploring, with the aim of enhancing their services and products.

Figure 6. The central actors of the age business core process
Unfortunately, the manifold knowledge and information underlying the age business core process is fragmented and does not reach the members of the innovation network in the right amount, at the right moment and in the right form to enhance collective learning sufficiently. The main actors of the core process have clearly seen the need to promote the collective learning creation and management to reach the objectives set for the process. Therefore, during the starting phase of the core process, a knowledge management system has been designed to aid knowledge creation in the innovation network. The knowledge creation and management approach used is based on the SECI and “ba” models of Nonaka, Takeuchi and Konno (see Nonaka & Takeuchi, 1995; Nonaka & Konno, 1998; Kostiainen, 2002) and its construction and features are described in detail elsewhere (see Harmaakorpi & Melkas, 2005). However, the created model includes the learning spiral with tacit/explicit knowledge conversions (socialization, externalization, combination and internalization) and “bas” where the knowledge conversions take place. The model also includes self-transcending (see Scharmer, 2001) knowledge as a regional asset, which requires that we take into account two additional phases: (i) the conversion of self-transcending knowledge to tacit knowledge (embodiment)—“visualization”, and (ii) vice versa, the conversion of tacit knowledge to self-transcending knowledge—“potentialization”. Special attention was also given to the matters concerning regional knowledge vision and information quality in regional knowledge management. The created model is depicted in Figure 7.

The rye-bread model is essential in ensuring collective knowledge creation and innovation processes take place in the founded innovation networks. It is a tool for network leadership par excellence. The model has a strong emphasis on the future oriented

---

**Figure 7.** The “rye bread model” of knowledge creation. *Source: Harmaakorpi and Melkas (2005)*
knowledge creation enabling future trajectories to emerge in a region. Thus, the rye-bread model is indisputably enhancing the regional leadership, visionary, learning, networking and innovative capabilities. It is also a worthy tool for fostering the regional creative social capital.

One special task of the core process and the rye-bread model is to enable better cooperation between knowledge generation and diffusion subsystem and knowledge application and exploitation subsystem (Autio, 1998, pp. 133–134) in regional innovation generation by bringing together the actors of both subsystems in the same knowledge creation and innovation process.

Starting the Age Business Core Process

In the Lahti region, the start-up seminar for the age business core process was organized in August 2002. There were 66 participants from different actor groups. In the seminar, the core process thinking was presented and the opportunities offered by the age business to the Lahti region were discussed. The participants considered the future of the age business to be promising and agreed to put the age business core process into practice in the Lahti region. The participants were also asked to fill in a questionnaire that surveyed their opinions about core process thinking and the development of the age business core process. Thirty-two questionnaires were returned.

The participants were asked, for example, to evaluate on a scale of 1–5 how well the core process thinking works in creating the age business network. The average value of the answers was 4.2. They were also asked, using the same scale, to evaluate the opportunities of the age business in the Lahti region. The average of the answers to this question was 4.3. Based on this, core process thinking and the age business core process got an extremely favourable reception among the actors. All the respondents were willing to actively participate in the development of the age business core process or at least to follow the development of the process. The participants were asked also to evaluate, how suitable the selected criteria for evaluation of industries and areas of expertise were. The average of the answers to both questions was 3.5 indicating the necessity to develop the criteria further.

Discussion

In the beginning of the 1990s the Lahti region was in an awkward situation because its regional competitiveness was significantly threatened. As an old industrial region it had begun to decline and the region had serious problems transforming itself from the industrial era to the information era. During the 1990s a large consensus that knowledge creation and innovativeness should be heavily promoted in the region had emerged. Because of the lack of a regional innovation policy, the regional innovation system had been formed randomly and nobody really knew what it was and where it should be steered. It was realized right at the outset that a step-to-step development tool was needed in the process.

The regional development process and the process to design a suitable innovation policy tool began with asking basic questions like: What are the characteristics of the changing techno-economic paradigm and what are its effects on socio-institutional systems? How can a region build sustainable competitiveness? What is the role of history and
resource-base in building competitiveness? How can an innovation policy be carried out in a networked regional development environment? What are the origins of innovativeness in the present world? How could learning processes be enhanced in a region? What is the role of social capital and how could it be promoted in such a fragmented environment? These questions paved the way for the development process and the tool that was created.

One might ask why did the Lahti region choose the RDPM as a tool for innovation policy and not some other method? Actually, the Lahti region never chose the tool. It is the baby of the development process in the region. The development process began with a thorough theoretical assessment including benchmarking the existing regional innovation system conventions. This assessment outlined the shape of the RDPM. The method was carried out phase by phase in an interactive process with the central players in the region. The method was improved by discussions with those players and by further theoretical assessments.

What are the actual effects of the tool on the Lahti region? The main effects are the changed patterns of acting and increased awareness of the regional innovation system and its importance for the region. Earlier there were some randomly working organizations trying to enhance the entrepreneurial activities of selected sectors. The old-fashioned industrial policy measures were dominant. However, the Lahti region lacked dynamic strong industries and clusters. This led to the idea of regional development platforms as a concept to describe the business potential in the region by making promising combinations of industries, areas of expertise and future megatrends. It was considered to be an innovative way in creating new paths from existing resource configurations. Perhaps the main change from the earlier situation has been the active creation of regional multi-actor innovation networks by the core processes. The knowledge creation and management in those networks are strongly emphasized in those networks. The knowledge creation tool, the rye-bread model, included in the innovation policy tool has been well received in the region.

The RDPM has changed the strategy work in the region remarkably. The recent strategies are based on the regional development platform and core process thinking (see Korkeakoulutöryhmä, 2002; Päijät-Hämeen liitto, 2003a, 2003b; Harmaakorpi et al., 2003; Harmaakorpi, 2004). Therefore, the RDPM passed methodologically the market test for constructive research defined by Kasanen et al. (1993). Because the core processes are the main method of funding the development of the regional innovation system, a good foundation is laid for further development. The realization of the RDPM in the Lahti region is so recent that it is too early to say what its effects are in terms of concrete success. Many of such indicators have been favourable to the region in the past 2 or 3 years, but it would be naïve to try to estimate what the role of the RDPM is in this process. It is certain, however, that the method has changed the innovation policy in the region and in that sense it has responded well to the demands placed on it.

The RDPM can also be criticized based on the experiences gained in the Lahti region. It is a systemic and unconventional tool and, therefore, is quite vulnerable in practical use. It takes a long time to conduct all the phases making it quite demanding to use. It is particularly difficult to realize the formation of the core processes of the regional innovation system and to begin the collective knowledge creation process. In the Lahti region some of the core processes have started very well while some are still struggling in the starting phase. It needs much shared vision and will power from the central developers of the regional innovation systems to make the necessary
institutional changes happen. If a region lacks will power and shared vision it is better to use some more conventional methods. The tool can also be criticized as it tries to change too much in too short a time. It is quite a leap from conventional industry based development strategies to the RDPM and it has obviously been difficult to assimilate in some circles. There has also been some criticism that it is somewhat difficult to explain to outsiders how this new type of innovation policy in the Lahti region works because of the very many new terms and concepts.

As a final conclusion, an illustration of the modern regional innovation environment is presented in Figure 8. The illustration may look complex, but that is what developing a regional innovation system is all about: managing complexity. A regional innovation system is affected by techno-economic change creating demands for renewal of regional resource configurations in an interactive, networked and cumulative development process. This process needs to be promoted by an adequate policy tool leading the way to regional innovativeness, productivity, competitiveness, economic growth and wellbeing of citizens. The RDPM offers such a tool.

**Note**

1. This article is based on a paper presented at the 43rd Congress of the European Regional Science Association (ERSA), Jyväskylä, Finland, 27–30 August 2003.
References


