

The Role of Innovation Intermediaries in Innovation Systems

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Abstract

The paper investigates the role of innovation intermediaries in sector-specific regional innovation systems. Innovation is viewed as a non-linear, iterative process and open process involving multiple actors from different parts of the innovation system. The paper studies in particular innovation intermediaries that provide support to firms in the regional innovation system through the fulfillment of key innovation system functions. The implication of the fulfillment of innovation system functions by innovation intermediaries in the Scandinavian food sector context is examined through in-depth interviews and analysis of secondary documents. It concludes with a discussion on the potential of enabling innovation intermediaries to play a more strategic role in regional innovation system.

Keywords: *Innovation intermediaries, innovation systems, innovation system functions*

1 Introduction

In many countries' economic policy, both at the national and regional level, focuses are placed explicitly on innovation as the way to achieve long-term economic growth and renewal. This development has been accompanied by a similar development within the academic policy debate. One example is the emergence of the innovation systems (IS) perspective, which has grown into one of the dominant policy perspectives in many European countries. It represents a systemic approach to innovation and innovation policy and thus places emphasis on the interplay between different system actors (firms, research and educational institutes, and supporting actors) in fostering innovation. Thus, a key issue in the IS approach to policy is on how supporting actors can facilitate innovation by taking on intermediary roles within the system.

In line with this, the aim of this paper is to analyze the way in which a specific type of supporting actor, the innovation intermediary, contributes to the performance of key systemic functions. In doing so, we draw on a body of research focusing on analysis of the functional dimension of innovation system and how systemic functions affect the performance of the system (Bergek, Jacobsson, Carlsson, Lindmark, & Rickne, 2008a; Hekkert & Negro, 2009; Negro, Hekkert, & Smits, 2007; Wieczorek & Hekkert, 2012). The paper investigates the functions performed by the central innovation intermediaries in two sector-specific regional innovation systems in Sweden and Denmark. Regional innovation systems (RIS) is used as unit of analysis because there are significant regional differences in industrial and technological specialization and in research and policy activities within a national territory (cf. Howells, 1999).

2 Theory

Over the past few decades, the view on innovation and innovation policy has undergone considerable development. Perhaps most importantly, there has been the move away from

viewing the innovation process as a closed and linear process (Mytelka & Smith, 2002). In the linear model, innovation is primarily seen as a process of discovery, typically originating in research and development and resulting in new products being brought to the market. This has been described as a science and technology push mode of innovation (Jensen, Johnson, Lorenz, & Lundvall, 2007). It is however today widely acknowledged that innovations may originate from almost anywhere inside as well outside the organization and that the process is not linear but rather iterative characterized by multiple feedback loops (Smith, 2005). An example of this is the acknowledgement of the consumers' role in the innovation process, e.g. market orientation (Lukas & Ferrell, 2000). The science driven mode of innovation is thus complemented by a more interactive and user driven view (Isaksen & Nilsson, 2012; Jensen et al., 2007).

In addition to being non-linear, innovation is also increasingly seen as an open process (Chesbrough, 2003) where an important element of the competitiveness of a firm is its ability to identify, internalize and use external knowledge (Cohen & Levinthal, 1990). While the degree that this represents a truly new way of thinking about innovation can be discussed (see Trott & Hartmann, 2009), the open innovation logic has become highly influential amongst researchers and practitioners alike. This in turn holds important implications for innovation policy. One such implication is that it is increasingly argued that innovation policy needs to be systemic (Lundvall & Borrás, 2005). This means acknowledging that many, if not most innovation processes involve multiple actors from different parts of an innovation system performing different activities and functions (Edquist, 2005). The following section introduces the systemic view on innovation together with a discussion on the role of innovation intermediaries within the system.

2.1 Innovation – a systemic view

The IS view has evolved over the last 20 years into one of the main strands within innovation and innovation policy research. Seminal contributions by Freeman (e.g. 1987) and Lundvall (1992); as well as Nelson (1993), Carlsson and Stankiewicz (1991), Edquist and colleagues (1997) among others argued for the relevance of a systemic view on innovation where learning is seen as a socially embedded interactive process that only can be understood by including institutional and cultural context in the analysis. Innovation systems can be defined, following Lundvall (1992 p.12), in a narrow or a broad way. The narrow definition includes “organizations and institutions involved in searching and exploring – such as R&D departments, technological institutes and universities”. The broad definition, which we follow in this paper, includes “all parts and aspects of the economic structure and the institutional set-up affecting learning as well as searching and exploring”. This rather broad definition has merits in its inclusiveness, but needs further specification to be useful. Firstly, a distinction between different levels of analysis can be made since the systemic view is applied to national systems (NIS), regional systems (RIS), sectoral systems (SIS) and technological systems (TIS). While they emphasize different dimensions of the system, these research traditions share a common conceptual framework and are highly interrelated. Regional systems exist within a national system, technological systems and sectoral systems are interrelated, and sectoral systems can be analyzed in combination with national or regional perspectives. The development of these different approaches to studying ISs is a result of the contingent nature of innovation; i.e. that innovation processes differ by industry/sector, field of knowledge, type of innovation, country etc. (Pavitt, 2005).

A further specification of ISs is in terms of its key components or features. ISs consists of a network of actors interacting within a specific institutional infrastructure (cf. Carlsson & Stankiewicz, 1991). The actors can be divided into: [1] the production structure (i.e. companies), [2] the knowledge infrastructure (i.e. organizations, such as universities, research institutes and training organizations involved with creation and dissemination of knowledge), and [3] the support structure (i.e. various organizations, often partly or wholly publicly funded, tasked with supporting the economy in a region or sector) (Nilsson & Moodysson, 2011). The focus of this paper is on a specific sector (the food sector broadly interpreted) within a regional innovation system. Furthermore, the highlight is on the role of the leading actors in the system's support structure and more specifically, how innovation intermediaries may contribute to the performance of regional innovation systems within food.

2.2 *Systemic functions*

In the literature on innovation systems there is a growing interest in the key functions as a complement to structural analyses of the system (Hekkert, Suurs, Negro, Kuhlmann, & Smits, 2007; Liu & White, 2001). At the most general level the main function of an innovation system is to pursue the creation of innovations (Edquist, 2005). However to be useful, further specification of the sub-functions supporting this main function is required. Johnson and Jacobsson (2000 p.109) has developed the concept of 'system functions' and defined it as "a contribution of a single component or a set of components to a system's performance". They argue that an IS can fruitfully be analysed in terms of its 'functional pattern', i.e. how these functions have been served (see also Hekkert & Negro, 2009; Negro et al., 2007).

A number of IS functions has been identified in the literature (see Charminade & Edquist, 2006 and; Markard & Truffer, 2008 for overviews). Bergek et al. and Hekkert et al. (Bergek et al., 2008a; Bergek, Jacobsson, & Sandén, 2008b; Hekkert & Negro, 2009; Hekkert et al., 2007) provide inventories of system functions, including: Knowledge development and diffusion; Entrepreneurial experimentation; System infrastructure creation; Influence on the direction of search; Market formation; Legitimation; Resource mobilization; and Development of positive externalities/synergies. In Table 1 below, these functions are described and examples of output are given.

Table 1. Functions of technological innovation systems (adapted based on Bergek et al., 2008b; Hekkert et al., 2007)

| Innovation system function | Description | Examples of key output |
|--|--|---|
| Knowledge development and diffusion | Creation of new knowledge and facilitation of information and knowledge exchange. | Scientific, technological, and market knowledge. Built and disseminated through R&D, learning from new applications, imitation etc. |
| Entrepreneurship | Creation of new businesses | New businesses and firms |
| System infrastructure creation | Development and maintenance of the infrastructure of the system | Physical infrastructure, e.g. production plants, laboratories and roads. Non-physical infrastructure, e.g. research groups, innovation intermediaries, and educational institutes. |
| Resource mobilization | Building and attraction of resources (human, financial, complementary etc.) relevant to the RIS. | Labour markets (skilled people); financial capital (e.g. venture capital); complementary assets (e.g. support services and products, input goods) |
| Guidance of search | Attraction of external actors to the RIS, to direct their search and investments towards the system. Also to direct the attention of actors in the system towards specific problems and growth opportunities. | Attract actors to enter the RIS. Identification of problems and opportunities and guide existing RIS actors' attention to address these. |
| Market identification and formation | Identification of markets or market niches as well as stimulation of the formation of local markets. | Business opportunities identified and demand stimulated/created. |

| | | |
|---|--|--|
| Legitimation | Creation and building understanding, support and legitimacy for the RIS activities and agendas (internally and externally). | Internally: Strategic coherence, joint vision, shared understanding etc. Externally: Coherent image of the regional industry or agenda towards external actors. |
| Facilitation/creation of synergies | Identification and utilization of synergies within the system. Indicates the dynamics of the system since externalities magnify the strength of the other functions. | Collaboration and joint projects (e.g. joint product development, processing, R&D, lobbying, resource development etc.) |

The role of the actors in the support structure is thus to develop concrete activities that contribute to the performance of these functions. For example, the function of mobilization of human resources is fulfilled by the performance of concrete activities such as organizing training programs or recruitment activities.

While all actors within the IS are involved in carrying out these activities, the actors in the support structure have a specific role as coordinators or brokers within the system. Lynn et al. (1996) distinguishes between substructure organizations that produce the innovation or its technological complementarities, and superstructure organizations that specialize in coordinating flows of information or coordinating the activities of the substructure organizations. Superstructure organizations can be further conceptualized by drawing on the literature on innovation intermediaries.

2.3 *Innovation intermediaries*

An innovation intermediary is defined by Howells (2006 p.720) as “ [a]n organization or body that acts [as] an agent or broker in any aspect of the innovation process between two or more parties”. Intermediaries are thus defined by what they do or which roles they perform rather than by their characteristics. Therefore, analyses of intermediaries include a variety of private and public organizations such as regional institutions (Hargadon & Sutton, 1997), research-industry liaison offices (Bruns, Maijers, & Petersen; Bryman, 2006), science parks (Hansson, Husted, & Vestergaard, 2005), innovation consultants (Klerkx & Leeuwis 2009), knowledge intensive business services (KIBS) firms (Howells 2006) and innovation brokers (Batterink, Wubben, Klerkx, & Omta, 2010; Klerkx, Hall, & Leeuwis, 2009).

An important distinction that can be made between different types of innovation intermediaries is that between organizations whose primary aim is to undertake an intermediary role, and those that perform intermediary activities as a by-product of their main activities (Winch & Courtney 2007). Examples of the former are innovation support centers and organizations supporting innovation networks, while examples of the latter are consultancy firms and research-liaison offices of universities. Indeed, even for dedicated innovation intermediaries, many of their activities are not related specifically to innovation (Howells, 2006).

This paper focuses on dedicated innovation intermediaries as superstructure organizations of innovation systems (Lynn et al., 1996). These are defined as organizations “...acting as a member of a network of actors in an industrial sector that is focused neither on the generation nor the implementation of innovations, but on enabling other organizations to innovate.” (Winch & Courtney, 2007).

The main tasks performed by innovation intermediaries in order to facilitate the innovation process has traditionally been related to scanning, gathering and communicating information; linking together actors and brokering relationships; and supporting and facilitating steps in the innovation process of firms and between firms, including evaluation, accreditation, and commercialization (cf. Howells, 2006). This typically involve transformation of knowledge, bridging cultural and cognitive differences and providing implementation for the innovation and intellectual protection (Klerkx & Leeuwis, 2008).

There is considerable overlap between the key activities or functions of innovation intermediaries and those highlighted in the IS literature (see Table 1). In both bodies of literature there is a considerable emphasis on generating and disseminating knowledge and information among actors. There are also shared realization on the centrality of scanning and identifying future opportunities and brokering and matchmaking between actors. A significant difference between the literatures is however that in research focusing on innovation intermediaries, there is a strong emphasis on supporting stages in the innovation process. This is illustrated by the fact that in Howells’ (2006) inventory of ten pivotal innovation intermediary functions six are closely tied to supporting steps in the innovation process of companies: testing, validation and training (e.g. pilot facilities, and inspection); accreditation and standards setting; regulation setting and arbitration; IP management and protection; commercialization support; technology evaluation and assessment. While many of these can be linked to systemic function, they are more concrete and focused on supporting the firms rather than the system as a whole.

In the following chapters we present an analysis of the intermediary activities performed by key policy actors within two regional innovation systems within food. We link the concrete and actor focused activities to the systemic functions presented earlier.

3 Research design and method

In order to investigate the role of innovation intermediaries in the two cases of Öresund Food (ÖF) and Skåne Food Innovation Network (SFIN), the empirical analyses is based on two main types of empirical material. Firstly, documents dealing with the two intermediary initiatives and with the regional innovation systems were collected. Examples of such documents are annual reports, funding applications, and strategy documents of the two intermediaries; and external evaluations of the innovation system in Skåne and Oresund. These documents were supplemented with current electronic documents and web pages that describe the activities conducted by the two intermediaries.

Secondly, a number of ten in-depth interviews were conducted with key stakeholders within the innovation system and with respondents from the two intermediaries. The interviews followed a semi-structured design, focusing on the topic of innovation, policy activities and the roles of the intermediaries within the larger system. The semi-structured design allowed room for open-ended answers and elaborations on behalf of the respondents. The data

collected for this project represents the latest step in empirical and analytical work on the regional system, the food industry, and innovation policy conducted over the last 10 years in Skåne and in the Öresund region (Henning, Moodysson, & Nilsson, 2010; Isaksen & Nilsson, 2012; Nilsson, 2008; Nilsson & Moodysson, 2011; Nilsson, Svensson-Henning, & Wilkenson, 2002).

Based on the data collected, a data set was compiled that enables analyses of the two intermediaries and comparisons of their structure and development over time.

4 Policy in the Öresund Region

The Öresund Region is a cross-border region with about 3,7 million inhabitants, comprising of the Swedish region of Skåne and the Capital Region of Denmark and Region Zealand in the Danish Copenhagen region. Over the last 20 years the Öresund Region has been subject to several public policy initiatives aimed at facilitating integration between the countries. These initiatives were speeded up by the planning and construction of the Öresund Bridge, opened in 2000. Close cooperation has been set up between local and regional government and between universities in the two countries, with the aim to facilitate industry collaboration and synergies in different industries. One example is the food industry, which is a historically strong sector in both Skåne and Denmark. The Danish side has about 1.8 million inhabitants and boast of financial and life science companies and large food producers with high export volumes (Lagnevik, 2008). Skåne is the southernmost region of Sweden, located just across the Öresund Bridge from the Danish capital of Copenhagen. While Skåne's industrial structure is rather diverse, it holds a high concentration of actors within food production and processing, as well as auxiliary sectors such as food packaging and logistics. In total, close to 30,000 people are employed in food processing and production in the region (Isaksen & Nilsson, 2012) and approximately half of Swedish research within food is conducted in Skåne (Kempinsky, Sandred, & Sjögren, 2011).

There have been several policy initiatives aiming at facilitating innovation, growth, and renewal in the sector, on both sides of Oresund. Since 2000, the two major initiatives have been Öresund Food (Network) and Skåne Food Innovation Network (SFIN).

4.1 Öresund Food

Öresund Food Network (ÖF) was initiated in 1999 as a European development programme to support collaboration between member states in the European Union (INTERREG II in 1999 and later III A co-funding). As one of the seven platforms established in the Öresund Science Region, it is financed by the Danish and Swedish states together with their regional governments and network members. Later known as Öresund Food (ÖF), it is part of the Öresund Food Excellence plan that Region Skåne has established together with Copenhagen Capacity on the Danish side of the Öresund Strait. The main task of Öresund Food Excellence is to promote the unique skills within the food sector in the Öresund Region and to assist foreign companies and investors in finding information and advice on how and where to establish their business in the Öresund Region. In the period between 1999-2010, ÖF engaged in various projects such as winter and summer schools as learning programs for companies and PhD students; human testing project on health claims on food; participating in networks such as FINE (Food Innovation Network Europe) to develop strategies, action

programs and tools to increase regional investment in the food related R&D and innovation; and Healthy Growth which focused on the development of tasty and health promoting foods. In the 2010 annual report, their activity areas included international outlook, interdisciplinarity, trend spotting, lobbying, knowledge, innovation and research & development (refer to Table 2 for more details).

In March 2011 the Öresund Food's Annual meeting was cancelled and the reason provided was that the Board of Vice-Chancellors for Öresund University has decided to close down all the Öresund Science Region platforms for cluster facilitation including Öresund Food. On-going projects was to be continued by the universities (Olofsdotter, 2012). As of October 2012, some former Öresund Science Region platforms were seen continuing under other names or projects continued by other institutions in the Öresund region.

4.2 *Skåne Food Innovation Network*

Skåne Food Innovation Network (SFIN) was established in 1994 with the aim at preparing the local food sector for Sweden's approaching membership in the European Union, and the anticipated increase in international competition. SFIN is thus a local Swedish policy initiative *within* the Öresund Region. It has developed into a hub gathering actors who want to develop Skåne into a food central for Europe. From first functioning like a business club for major companies in Skåne discussing common issues in the industry, it has since evolved to a network with strong commitment from businesses, researchers and society with members and partners including companies, organizations, public authorities, universities and colleges. They are funded by Vinnova's (Swedish Governmental Agency for Innovation Systems) grant under VinnVäxt for 10 years (from 2003 coupled by equal funding from the institutions and food industry), along with membership fees and project-based funding. SFIN have been involved in various projects concerning food such as Taste of Skåne, Joyful Meals, Mealtime pleasure for the elderly and running networks such as the MD Network and the Foresight Network.

In their 2011 annual report, SFIN stated five main activity areas: Cooperation & Strategies, Innovation & Entrepreneurship, Jobs & Careers, Tomorrow's Meal Services, Taste of Skåne and Food Packages (refer to Table 3 for more details).

5 **Analysis and discussion**

A description of key innovation systems functions as adapted from Bergek et al., (2008b) and Hekkert et al.,(2007) was detailed in Chapter 2.2. Under Appendix I in Table 2 and 3 the innovation system activities of ÖF and SFIN are grouped based on the system functions to which they primarily contribute. Diagram 1, below, present an overview of the number of activities directed at each IS function. The aim is to analyse how ÖF's and SFIN's intermediation activities help contribute to the regional innovation system. In this chapter, the activities of the two initiatives are compared and discussed based on a system functions perspective. While the frequency of activities is used in this analysis, we acknowledge that there are aspects (such as the magnitude of the activity) and indirect effects of these activities that may not be included in this analysis.

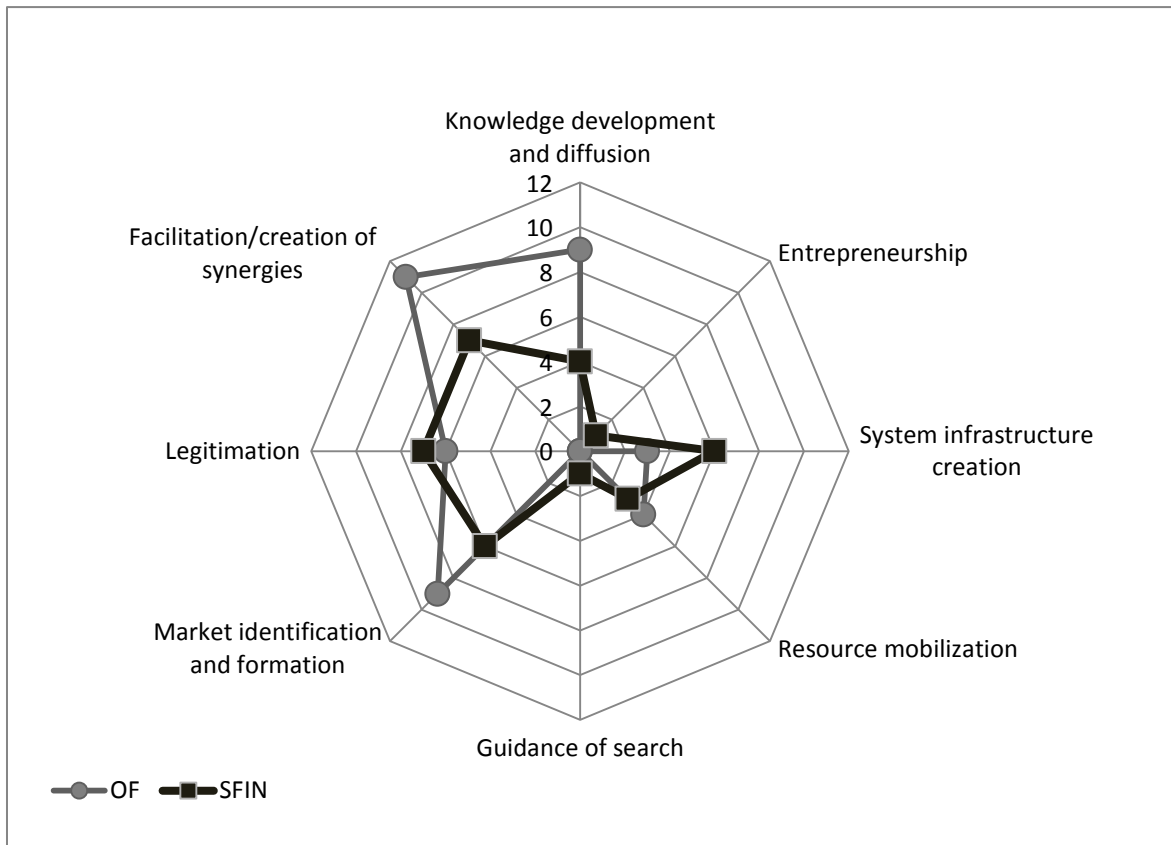


Diagram 1. Mapping of Intermediaries' activities to Innovation system functions

5.1 Fulfilment of Innovation Systems Functions

From Diagram 1, we can see how both intermediaries has a high concentration of activities designed to promote the functions of market identification and formation, legitimation, facilitation/creation of synergies and knowledge development and diffusion. These activities involve the coordination of resources (both financial and human) across various sectors and actors in the production structure, knowledge infrastructure and support structure of the systems (companies, authorities, higher education institutions etc.). For example, ÖF supported research activities on the use of food products in disease prevention and treatment as well as opportunities in more efficient food processing centred mostly on the question of how to make healthy food taste better. ÖF ran some 15 sub-networks on different subjects (e.g. child nutrition) and cooperated with the Medicon Valley life science platform in Öresund Region (e.g. on better food menus for hospitals), as well as with European partners, e.g. within the FP6-funded Regions of Knowledge "FINE" project (Food Innovation Network Europe) (Streiffert, 2008a).

Similarly, SFIN runs projects such as Taste of Skåne as part of its food tourism program for the region. It also fulfils an additional function that ÖF did not – providing advice to budding entrepreneurs on a regular basis and connecting them to the right people/places to set their innovative ideas in motion.

While similar in many respects when it comes to how they focus their intermediation activities, there are also important differences between ÖF and SFIN. For example, we can see from Diagram 1 the highest concentration of activities for ÖF are in the areas of knowledge development and diffusion, market identification and formation and facilitation/creation of synergy. This corresponds to the source of ÖF's funding in that most are provided through project collaborations (such as BEST foods) and represent short-term funding, regardless of how long the project might be on going. However, they lack efforts in the function of entrepreneurship. The strategy of long-term growth for any organization including intermediaries should stretch beyond short-term projects and supporting and promoting entrepreneurship can be seen as one-way innovation can be promoted on a long-term basis through the growth of entrepreneurship spirit. ÖF also concentrate their resources in the area of market identification and formation, along with facilitation/creation of synergy which can be seen in their marketing efforts advertising what they are doing as an intermediary and their work with the academic clusters. While ÖF becomes quite well-known within the academic sector (professors and researchers) as one providing access for EU project applications or other academic-related project funding, this may not work as well in helping them fulfil innovation system functions. When interviewees were informed about the decommissioned of ÖF during one of interviews, they were not fazed and were quite confident that the on-going projects or funding will be subsumed under one of the universities in some manner. This speaks volume of the image academic actors have of ÖF within their network in that they are not seen as innovation intermediaries for the system but as one of the sources that helps coordinate funding.

On the other hand, SFIN has a developed Innovation and Entrepreneurship program in which they act as sounding board for budding entrepreneurs. In an interview with the head of the Innovation and Entrepreneurship department, he shared that entrepreneurs or anyone can make an appointment to meet up with an advisor who will advice them on the feasibility of their ideas/products, connect them to the right people or other types of resources they may require. SFIN supports entrepreneurs through acting as sounding boards and provide project support for a limited time (Skåne Food Innovation Network, 2011). This on-going effort to build an innovative landscape through encouraging entrepreneurship has have good feedback and enabled budding or even ideas from SMEs to be manifested into reality. When speaking with newly start-up companies, they expressed appreciation for the work SFIN had conducted in this area. We also see similar evidence in SFIN's 2011 annual reporting of 10 new products, 12 prototypes-in-progress for products and services and 18 new established companies.

Hence, we can see how these activities conducted by the intermediaries are helping to build the innovative landscapes in their respective region. While there is currently no benchmarking tool for measuring the performance of the intermediaries, the functions perspective for the innovation system can be considered as a way of evaluating the performance of an intermediary for innovation system.

5.2 *Comparisons on innovation strategies and policies*

Öresund Science Region and its platforms including ÖF are co-financed by the region's universities, Capital Region of Denmark, Region Skåne, the Danish Ministry of Economic and Business Affairs, the Swedish Ministry of Enterprise, Energy and Communications, and a

membership of more than 2500 companies (Streiffert, 2008a). The Öresund region is comprised of authorities, businesses and universities from two different countries operation in different working cultures, administration and languages, which are seen to present challenges for cross-border collaboration and can affect the fulfilment of the innovation systems objectives for the region. For ÖF, fulfilment of innovation system functions includes bringing academic actors together in programs and meetings such as the winter schools and this is also evident from the interviews with the academics this was what ÖF was known for and also strong in. ÖF was financed by participating universities, the Capital Region of Denmark, Skåne Regional Council, Region Zealand, ÖF's members and the EU (ÖresundFood, 2010). In their last annual report, ÖF acknowledged that the majority of their funding comes from the on-going projects and that there is a need to increase basic funding and member fees funding to keep up with the high level of project support.

For SFIN, after the initial phase (2003-2004) during which it concentrated in activities in the academic realm, they expanded and utilised their resources towards fulfilling more functions for system innovation (Refer to Table 3) such as setting up Entrepreneurship Council, MD networks and Food Tourism. This strategy thus spread its resources and influences both vertically and horizontally within the food sectors involving not just academics but firms and society itself. The Vinnova funding which provided 10 million SEK to SFIN's activities in the food sector in Skåne had the condition of equal amount of funding (in kind) from companies and public organizations (Lagnevik, 2008). This contributed to ensure that the focus and strategy of intermediation is on a long-term basis rather than concentrated on obtaining funding based on project work only by incorporating the need to have involvement and commitment from companies and public authorities.

Towards the end of 2008/beginning of 2009, new guiding principles were established for SFIN's activities with a consistent idea of networking, focusing in different networks. In 2010 more small producers and retailers are included as network members. Members for both intermediaries started out with participation by the local business and subsequently grew to incorporate universities and local authorities. By 2010/11, the majority of ÖF's members consist of public authorities/associations, universities and research institutions (39/75) (ÖresundFood, 2010), while more than two out of three of SFIN's partners and nine out of ten of their members are private companies (Skåne Food Innovation Network, 2011). The innovation systems approach place emphasis on the interplay between different systems actors to foster innovation. ÖF's activities concentrated on mostly researchers and academics, which dominated in its member population.

6 Conclusions

In this paper we have attempt to understand how the fulfilment of innovation system functions by the innovation intermediaries can contribute to the performance of systemic functions through the theoretical lens of innovation system functions. In considering the two innovation intermediaries in the Öresund Region as case studies, it presents challenges but also fresh perspective in how both operates in similar sector and geographic and even fulfilling similar categories of innovation system functions can produce different results for the region's innovation system. This seems to point to the need for further work on understanding not only to the extent these innovation system functions are fulfilled by innovation intermediaries but also the magnitude, the type of interaction and the indirect

effects these activities can have on the innovation system. We also note that on the level of support structure for the innovation system, innovation intermediaries have the potential to play a role in keeping the spirit of innovation alive in the region through the strategies that they pursue.

Appendix I

Table 2. Öresund Food Goals/Activities/Functions (ÖresundFood, 2010)

| Goals | Activities | Functions |
|------------------------------|---|---|
| International Outlook | Delegations and visits | Facilitation/creation of synergies Legitimation |
| | International business networks | Legitimation |
| | International research networks | System infrastructure creation |
| | Match-making | Market identification and formation |
| | European projects | Knowledge development and diffusion |
| Interdisciplinarity | Cross border collaboration | Resource mobilization Facilitation/creation of synergies |
| | Public/Private Partnerships | Market identification and formation Facilitation/creation of synergies |
| | Match-making | Market identification and formation |
| | Bridge Building | Facilitation/creation of synergies |
| | Focus on interdisciplinary subjects such as Gastronomy & Sensation, Food & Health and Production & Sustainability | Facilitation/creation of synergies Knowledge development and diffusion |
| | Access to knowledge on logistics, ICT, sustainability, entrepreneurship, materials | Knowledge development and diffusion |
| Trend Spotting | Access to mega trends | Market identification and formation |
| | Methods, methodology & tools | Knowledge development and diffusion |
| | Access to existing material & research | Resource mobilization |
| | Presentations | Knowledge development and |

| | | |
|-------------------------------|---|---|
| | | diffusion |
| | Workshops, Seminars, Conference | Facilitation/creation of synergies |
| Lobbying | Large network of regional, national and international decision makers | Legitimation Market identification and formation Facilitation/creation of synergies |
| | Systematic information | Legitimation |
| | International network | Legitimation Market identification and formation Facilitation/creation of synergies |
| | Food media contacts | Legitimation Facilitation/creation of synergies |
| Knowledge | Access to food companies | Resource mobilization |
| | Access to food science & scientists | Resource mobilization |
| | Professional networks | Facilitation/creation of synergies |
| | Knowledge Sharing | System infrastructure creation |
| | Workshops, Seminars, Conferences | Facilitation/creation of synergies |
| | Analyses, reports and counselling | Knowledge development and diffusion |
| Innovation and R&D | Access to pilot plants and sensory labs | System infrastructure creation |
| | Method, methodology & tools | Knowledge development and diffusion |
| | Workshops, seminars, conferences | Knowledge development and diffusion Facilitation/creation of synergies |
| | Match-making | Market identification and formation |

| | | |
|--|--|-------------------------------------|
| | Assistance with project definition | Market identification and formation |
| | Assistance with project application and fund raising | Market identification and formation |
| | Project management | Knowledge development and diffusion |

Table 3. Skåne Food Innovation Network Goals/Activities/Functions (Skåne Food Innovation Network, 2011)

| Goals | Activities | Functions |
|--|--|---|
| Cooperation & Strategies | MD Network | Facilitation/creation of synergies Legitimation |
| | Foresight Network/Innovation guilds | Legitimation |
| | Participation in national and international cooperation, opinions building and process around laws and regulations on food-related areas | Guidance of search Legitimation |
| | Food Research Network | System infrastructure creation |
| Innovation & Entrepreneurship | Entrepreneur Council | Entrepreneurship Resource mobilization |
| | R&D Network | Market identification and formation Facilitation/creation of synergies |
| Recruitment | HR Network | Market identification and formation |
| | Advisory Board | Knowledge development and diffusion |
| | Trainee programme | Resource mobilization |
| | Power over Food | System infrastructure creation |
| | Homepage of food related information directed at students | Facilitation/creation of synergies |
| | Participate in job market days and organised study visits to food-related companies | Resource mobilization |
| | Student ambassadors for creating contact between companies and students | Knowledge development and diffusion |
| Joyful Meals | Chef Network | Legitimation Market identification and |

| | | |
|----------------------|--|---|
| | | formation Facilitation/creation of synergies |
| | Supply Chain Network | Legitimation |
| | Politician Network | Legitimation Market identification and formation Facilitation/creation of synergies |
| | Innovation pilot projects such as food for elderly and public institutions such as hospitals | Legitimation Facilitation/creation of synergies |
| Tasting Skåne | Micro companies | System infrastructure creation |
| | Food Tourism | Market identification and formation |
| | Tasting Skåne | Facilitation/creation of synergies |
| | Retailer Network | System infrastructure creation |
| | Producer group | System infrastructure creation |
| Food Packages | Cooperation with the food packaging cluster Packbridge | System infrastructure creation |
| | Food Packages portal | Knowledge development and diffusion |
| | Research and development of test packaging, biomaterials/nanomaterials | Market identification and formation |
| | Education within packaging techniques/innovation | Knowledge development and diffusion |

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