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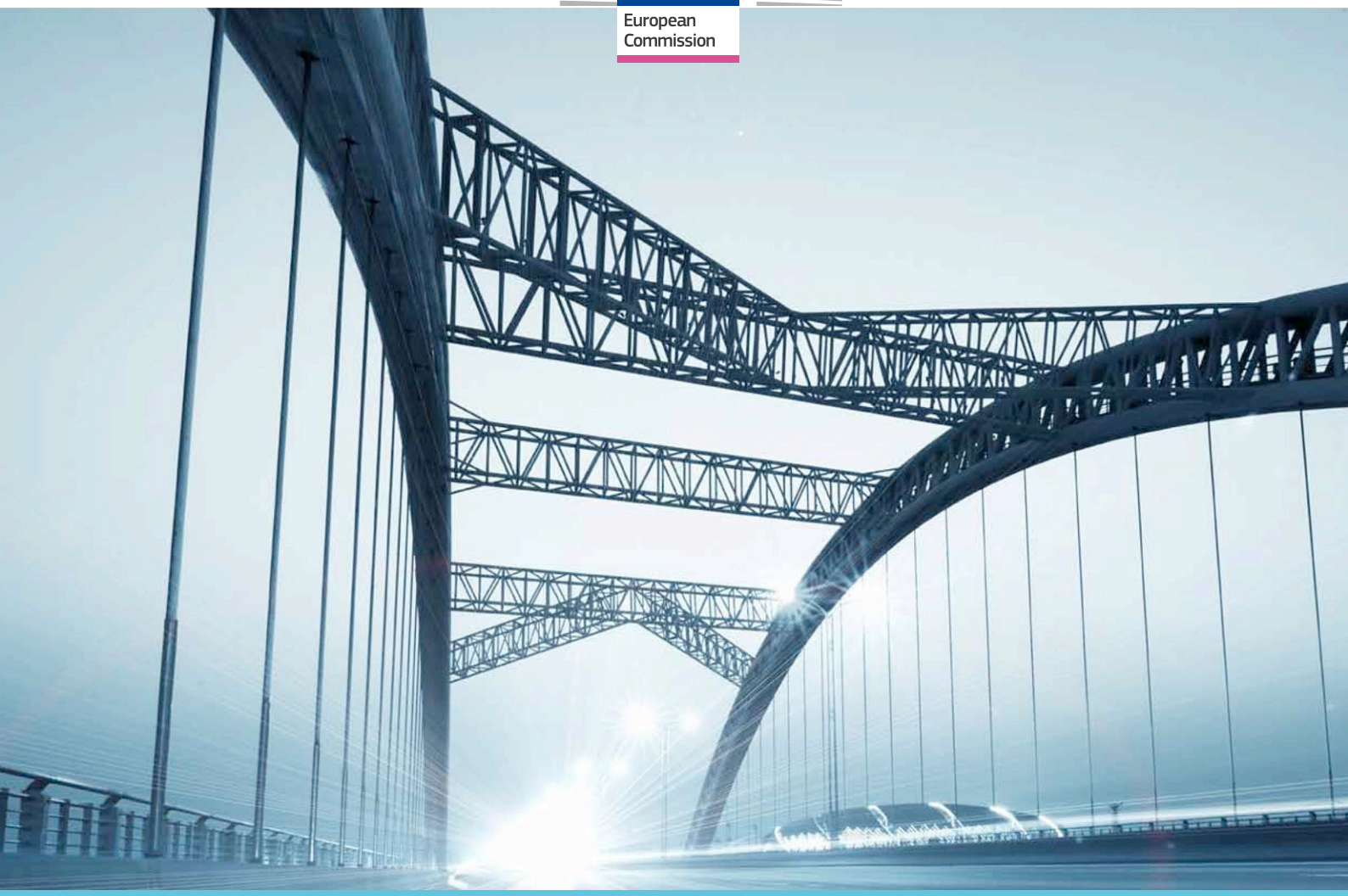

ESIC European Service Innovation Centre

DISCUSSION PAPER

Promoting Service Innovation through Cluster Initiatives

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January 2015

ESIC in Brief

Increasingly service innovation plays an instrumental role in the transformation and upgrading of traditional economic sectors and industries into more productive, competitive and high value-added business eco-systems. Considered as being multi-dimensional in nature, service innovation comprises innovation in services, service sectors or service industries that are provided by service entrepreneurs and service firms. It also takes place in manufacturing industries, adding further value and contributing significantly to overall productivity and profitability. There is a growing need to assess, analyse and demonstrate what impact service innovation has on industrial change and to assist Member States and regions towards a greater understanding of service innovation as a driver of industrial transformation and future competitiveness.

The European Service Innovation Centre (ESIC) is a two-year initiative commissioned by the European Commission's Directorate-General for Internal Market, Industry, Entrepreneurship and SMEs to capture and demonstrate the dynamics and large-scale impact of service innovation, as well as to assess how service innovation impacts on competitiveness, industrial structures and regional development. It also assesses the implications and impacts of service innovation on employment structures, economic patterns and value creation.

Primarily, ESIC has provided customised advice to the six selected model demonstrator regions of the Canary Islands, Emilia-Romagna, Limburg, Luxembourg, Northern Ireland and Upper Austria. The initiative also helps other EU regions and Member States to make better use of the transformative power of service innovation in strengthening existing and emerging industries and markets and in developing better industrial policies and smart specialisation and cluster strategies. The creation of a favourable eco-system for service innovation will boost supportive infrastructures and business conditions that, in turn, will facilitate the take-up of innovative services throughout the Member States' economies.

The European Service Innovation Scoreboard, the Summary Assessment Reports and Policy Briefs from all six Model Demonstrator Regions are available on the ESIC website at: http://ec.europa.eu/enterprise/initiatives/esic/index_en.htm

This work is a part of a service contract for the Internal Market, Industry, Entrepreneurship and SMEs Directorate-General of the European Commission.

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Introduction

This paper reports on five case studies of cluster initiatives that aim to promote service innovation and draws a number of lessons that may be of value to similar, future initiatives.

The first section of the paper attempts to answer the question *"Why are clusters relevant to service innovation?"* The second section describes in detail five examples of cluster initiatives that are actively involved in pioneering and developing service innovation. In this section, there is a special emphasis placed on the practical tools employed by these five initiatives. The final section teases out the lessons that can be learned from these cases with the intention of offering support and guidance, which might inspire the proliferation of service innovations.

1. Why are Clusters relevant to Service Innovation?

Service innovation refers to the development of new, or significantly improved, service concepts and offerings, service processes, business models, sales or marketing innovations (EC, 2012) and, as such, it is based on the simultaneous interaction of several parties such as firms, organisations and institutions. Service innovation can be instrumental in both the emergence of new service-based industries and in the transformation and renewal of existing manufacturing industries. Regional clusters, defined as "the geographical concentration of interconnected companies, specialised suppliers, service providers, firms in related industries, and associated institutions" (Porter, 1998) offer a dynamic business environment in which entrepreneurially-minded individuals can outline their ideas and then being to bring them to fruition, whether the ideas or concepts are related to new technology, services or organisational and marketing concepts.

Manufacturing and service firms that co-locate in regional clusters benefit from a range of advantages such as knowledge spill-overs, the pooling of financial and other resources, access to skills and multidisciplinary competences and cultural and social relationships. The need for a highly skilled and educated labour force is one factor that is driving the formation of cluster structures (Schricke, 2013) both in service industries and in servitising manufacturing industries. Another factor that helps to explain spatial clustering is the connection of (knowledge-intensive) services to large markets and to other strong manufacturing clusters (Keeble and Nachum, 2002; Weterings, 2005). This process is driven by the customised offerings and specific knowledge that these service firms can offer to other firms and organisations operating in different industries (Weterings, 2005). A third factor that is often mentioned in the cluster literature is the increased ease of access to specialised suppliers and customers that is equally important in the case of service innovation. Hence, clusters do matter and are relevant to service innovation, as they can generate new business opportunities by providing a space in which new types of links or connections can be initiated and then developed.

Policy-makers can strengthen the framework conditions that are necessary for the emergence, or support, of service-based clusters in emerging industries such as those in the areas of digital-based industries, healthcare industries or experience-based industries. Such framework conditions include the development of a service infrastructure, the expansion of cultural and social capital and improved access to new types of funding, such as crowd funding or microloans.[1] Policy-makers can also foster the servitisation process within manufacturing industries by providing explicit incentives to manufacturing and service companies and other organisations to support increased collaboration. The synthesis report 'Lessons from the Model Demonstrator Regions – Service Innovation in Practice' provides an overview of the types of support measures that can be put in place, e.g. as part of a modern cluster policy.

Cluster organisations that are responsible for facilitating links between cluster members and also offer specialised business services to cluster firms, can play a crucial role in fostering service innovation. They can develop new tools and facilitate networking that help connect manufacturing firms to service providers involved in design or knowledge-intensive services, which can provide testing facilities, ICT or telecommunication services. This can greatly increase the chances of developing new hybrid product-service solutions for customers. Cluster organisations can also play an important role in facilitating transnational cooperation and building bridges between clusters from different industries and even between manufacturing and service-oriented groups of firms.

[1] See also the analysis of industry-specific framework conditions for the development of world-class clusters provided by the European Cluster Observatory that made available three case studies on creative industries, eco industries and mobile service industries, available at http://www.emergingindustries.eu/framework-conditions.aspx

2. Cluster Initiatives that foster Service Innovation

This section explores five cases of cluster policies and cluster organisations that explicitly use the concept of service innovation to promote innovation in either service industries or service elements of other industries. The cases chosen here are not representative or exhaustive of this class of initiatives, but merely illustrate different and hopefully interesting approaches to promoting innovation in services through clusters. In selecting these cases, the following factors were emphasised:

- **Volume:** The initiatives are big enough to make a significant impact, as they have a large enough budget, number of participants and range of activities to affect their national target group;
- **Geographical coverage:** The initiatives are drawn from five different countries and illustrate national differences in goals and approaches;
- **Focus on services:** These cluster initiatives have an explicit focus on promoting innovation in service industries or on promoting the transformation of manufacturing industries through service innovation.

These case studies highlight the innovative business support tools used by the cluster organisation that can help companies to better exploit the potential of service innovation or to establish better connections between manufacturing and services industries. Each case study offers:

- An overview of the situation;
- A description of the business support tools used to foster service innovation; and
- A presentation of the results and outcomes of the initiative.

2.1. The Mobility and Multimedia Cluster

The Hungarian Mobility and Multimedia Cluster (MMCluster)[2] is an example of a cluster initiative seeking to promote innovation in services (software) and the service element in products (hardware). It was formed in 2007 to bring together the most dynamic actors in the field of mobile technology and new media in Central Hungary. The intention was to mix and match the R&D and innovation capacities in this new emerging industry and the objective was to foster innovation and entrepreneurship in MMCluster's attempts to achieve its main goals of:

- Promoting the competitiveness and business interests of its members;
- Supporting the research, development and propagation of the latest info-communications technologies; and
- Strengthening and invigorating the Hungarian innovation ecosystem.[3]

MMCluster has about 70 members and brings together a wide range of mobile technologies and new media service innovations that have been introduced by SME's, local branches of multinational ICT companies, research institutions, young start-up companies and venture capital funds. New members can join the MMCluster through a multistage process devised to assess the new applicant's innovation potential and openness to cooperation in business. These members are connected to a wide range of other industries through large corporations like Ericsson, whilst others are highly specialised, such as the tourism application 'Pocket Guide.'

The Mobility and Multimedia Cluster Coordination Office (MMOffice) is involved in the following activities:

[2] http://mmklaszter.com/en
[3] Mobility and Multimedia Cluster (2014)

Support tools of the Hungarian Mobility and Multimedia Cluster

The Hungarian Mobility and Multimedia National Technology Platform (MMPlatform) was initiated to draft a medium-term and **long-term Strategic Research Agenda (SRA)** for the Hungarian information and communications technology sector and to prepare the members of the platform for successful participation in international R&D and innovation projects. The SRA was formulated through close collaboration between industry and academia engaged in R&D for the field of mobile and new media technologies. The SRA

- Maps the R&D competences in this field in Hungary;
- Explores the future trajectories of these technologies;
- Examines the main factors influencing the trajectories and the strategic scenarios that can be based on them; and
- Draws conclusions on the best way forward to use the available assets, resources, and R&D competences to realise the full potential of the Hungarian info-communications industry.

Thus, the SRA contains , on the one hand, descriptive and predictive statements about the status of the Hungarian info-communicational sector and, on the other hand, strategic proposals on what needs to be done at the individual, organisational, industrial, governmental and national levels if the Hungarian info-communicational sector is to grow in the most propitious and effective direction.

Joint R&D projects. As an outcome of the MMPlatform, MMCluster initiates and participates in joint R&D projects. MMCluster is also tasked with assisting the market entry of the products and services that are developed, as a result of these R&D activities. To foster service innovation through R&D projects, MMCluster has a representation in Brussels so that it can maximize the benefits of EU programmes. Currently, this MMOffice is the coordinator and the project manager of two European AAL projects[4], and a member of a Leonardo da Vinci partnership. These three projects help companies within the cluster to innovate and they are briefly described below:

> **Nostalgia Bits (NoBits).** Nostalgia Bits is building a platform for elderly people and their families to identify, digitally archive and share their memories that are currently captured in letters, newspaper clippings, postcards, photos, and other artefacts. The project is being implemented by an international consortium of nine partners and is co-funded by an AAL grant with joint sponsorship from the European Commission and the Hungarian Government;
>
> **ElderHop.** ElderHop is developing a complex solution to the problem of helping elderly people to continue to undertake activities outside their homes and, in particular, shopping, which is one of the most important social tasks that they perform on almost a daily basis. The project is managed by an international consortium of seven partners and is co-funded by an AAL grant, which is again jointly sponsored by the European Commission and the Hungarian Government;
>
> **InnoCrea.** The objective of InnoCrea is to produce a modular training programme to foster creativity and innovation in business development. The intention is to promote the use of the tried-and-tested methodology developed by the IESE Business School[5] within the additional countries of Italy, Slovenia, and Hungary. The project is organised by five partners and is co-funded by the European Commission, under the Leonardo da Vinci Lifelong Learning Programme;

In addition the MMOffice is involved in the **organisation of networking events, thematic workshops, and future-oriented exhibitions.** For example, MMOffice organises the Hungarian Innovation TechShow (HITS) each year that showcases the country's latest and

[4] http://www.aal-europe.eu/
[5] http://www.iese.edu/

most promising digital products to an audience of professionals, investors and the general public;

Moreover, MMOffice works towards **connecting collaboration partners** by facilitating links between member companies, the office intends to underpin innovative collaboration within the cluster.

2.2.Service Cluster Denmark

Service Cluster Denmark specifically targets innovation in services across a broad range of industries. The vision of the Service Cluster Denmark is to contribute to growth, innovation and competitiveness amongst service intensive enterprises in Denmark.[6]

Service Cluster Denmark strengthens research-based service innovation by creating new possibilities for cooperation and co-creation between enterprises, researchers and knowledge transfer institutions. Apart from stimulating service innovation activities in businesses, Service Cluster Denmark is a partner, facilitator and knowledge broker in service innovation both within Denmark and Europe.

The Service Cluster Denmark initiative was launched on 5 January 2011 and is funded by DASTI, the Danish Agency for Science, Technology and Innovation, for the period 2011 to 2018. It addresses four main societal challenges:

- Internationalisation: While working with both national and international partners, Service Cluster Denmark is collecting and testing best practice in the internationalisation of services;
- Productivity: Service Cluster Denmark creates a positive environment for the development of innovations that can contribute to cost reduction and increase the quality of services;
- Service strategy and management: Service Cluster Denmark focuses on new concepts and services including quality development, service standards and new sales methods;
- Qualified employees: Service Cluster Denmark identifies the main demands for competences that can ensure developments in the service intensive industries.

Service Cluster Denmark uses the following tools to foster service innovation:

Support tools of Service Cluster Denmark

Paid, personal membership

Service Cluster has a personal paid membership. The membership fee covers free access to network events, online project brokering, subscription to a newsletter and invitations to members-only events. Membership of Service Platform is thus individual rather corporate;

Online project brokering

The Service Cluster offers an online tool where members can post ideas, contribute to others' ideas, find partners and search for funding for service-related development projects. The ideas posted and funding sources are public but only members can post content and interact on the platform;

Events and presentations

The Service Cluster initiates and hosts events on innovation within services that involve speakers from innovative service businesses and research institutions. While some events feature generic topics relevant to broad segments of businesses across industries, others are intended for a more specialised audience. Members propose events and speakers of special interest to them and, in addition, the Service Cluster advertises external events that

[6] Service Cluster Denmark (2014)

may be of relevance to its members;

Analysis and evaluation

On its website, the Service Cluster collects and publishes recent analysis, impact assessments, case studies and evaluations on service innovation initiatives in the public and private sectors. The Service Cluster also initiates and commissions some of these studies.

2.3.Software-Cluster of Southwest Germany

The Software Cluster (Software-Cluster[7]) is an example of a cluster initiative targeting a specific service industry: software development. It is a German cluster of software companies and research institutions. The membership comprises over 11.000 software companies with more than 120.000 employees. The cluster region spans a wide geographical area in the southwest of Germany around the cities of Darmstadt, Kaiserslautern, Karlsruhe, Saarbrücken and Walldorf. The main idea behind this cluster is to support its strategic development and to make it possible to turn regional innovation into added value on a sustainable basis.[8]

The cluster was launched in a competition, in 2007, by the Federal Ministry of Education and Research under the scheme 'Leading-Edge Cluster (Spitzencluster),' in which 14 other German clusters are participating under the leitmotiv of *"Germany's cluster of excellence – More innovation. More growth. More jobs".* The Software-Cluster will receive support until the end of 2015.

The cluster's main area of expertise is business software. In other words, software for managing business processes within, and between, companies. The membership of the Software-Cluster includes the largest German software companies, SAP AG and Software AG, and numerous medium-sized companies. The computer science departments in the Universities of Darmstadt, Karlsruhe, Kaiserslautern and Saarbrücken also participate. In addition, research institutions such as the German Research Center for Artificial Intelligence (DFKI) and the Research Center for Information Technology (FZI) in Karlsruhe are active members. The objective of the partners within the Software-Cluster is to maintain and expand their central position in the global market for software targeted at enterprises, in order to ensure that further jobs can be created.

The objective of the coordination offices of the Software-Cluster is to support and strengthen cooperation within the cluster, in order to ensure that every company has the best possible platform to promote innovation. To achieve this objective, a range of services have been developed, which the companies within the Software-Cluster can use:

Support tools of the Software-Cluster of Southwest Germany

Cluster Services

All cluster services are facilitated by four coordination offices namely, the CyberForum Karlsruhe, KIS Saarland, STI Kaiserslautern and IT FOR WORK Darmstadt. The services are mainly consultancy services and include: Consultancy services for company founders and start-ups; technology transfer consultancy; contacts for guidance on issues relating to IT regulations; information/networking offers; establishment of cooperation partnerships; location marketing; trade mark-/industrial property rights consultancy;

Events

Many events are facilitated by the Software-Cluster. These range from 'Innovation Stock Market' events and innovation award events to conferences on IT Security, Big Data and the Future Internet Congress;

[7] http://www.software-cluster.org/de/

8 Software Cluster (2014)

Research projects

Large projects are being carried out within the scope of the Federal Ministry of Education and Research's 'Leading-Edge Cluster' competition on software innovations for digital companies (Software innovationen für das digitale Unternehmen). Also, individual projects are being undertaken that are financed from other sources.

2.4.The Connected Digital Economy Catapult in the UK

Like the German Software Cluster, the Catapult Centres in the UK target a specific industry/sector such as energy, transport and services, seeking to promote innovation and to remove barriers specific to its field. The Connected Digital Economy is a new cluster initiative, which became operational in 2013 based in London. The center is one of seven Catapult Centres in the UK, which have been created by Innovate UK (formerly known as the Technology Strategy Board) to generate innovation and growth within each of their specific areas.[9]

The Digital Centre is underpinning digital service innovation by providing facilities and expertise and by bringing partners together. As indicated on its website[10] "*The Digital Catapult builds platforms for many UK small businesses to innovate on, at speed and with less risk, so new digital products and services can be accelerated to market*." The Digital Catapult is a physical centre, where facilities are made available and research and events take place. The centre helps UK businesses to take advantage of the explosion of growth opportunities created by an internet-connected world that is changing all aspects of working, living, learning and playing. The Digital Catapult is mainly focusing on four key areas. Within these areas, projects are carried out to underpin digital service innovation in various ways.

Support tools of the Connected Digital Economy Catapult

Building diverse data and content sets

Many small businesses are unable to realise the full potential of data due to a lack of resources to even gather and analyse data that is openly available. This, in turn, means that many opportunities for the creation of new products and services are missed. A number of tools have so far been produced to help bridge this gap:

- The Open Health Data Platform;
- The Greater Manchester Data Synchronisation Programme (GMDSP);
- The Integrated Transport and Weather Information Pilot (ITWIP);

Reuse of content, first reducing licensing friction

Existing copyright licensing practices primarily serve the needs of major established players but are not always best suited to the needs of a new wave of creative small businesses that are promoting innovation based on the reuse of content. The Digital Catapult is working with the Copyright Hub to create a service that enables copyright holders to offer their content for reuse under a variety of licenses, through an easy to use online marketplace;

- The Copyright Hub;

Creating trust in the use of personal data.

This is a challenging area but it also presents many possibilities. The Digital Catapult is exploring ways of bringing information owners and technologists together to share, combine

[9] Catapult Centre (2014). Accelerating growth through the Digital Economy
[10] www.digitalcatapultcentre.org.uk

and work with personal, proprietary and confidential data without compromising the privacy, security and control that individuals wish to maintain for their data:

- miData Studio is a three-month feasibility study run by the Digital Catapult and its partners with the main aim of enabling citizens to have more control over their own data;
- With the Energy Midata Taskforce, the Digital Catapult is assisting the government in developing a blueprint for a new industry-wide Application Programming Interface, which will enable energy consumption data to be automatically accessed by consumers. With the consent and authorisation of consumers, it will also be accessible to third party organisations;
    - The Trusted Data Accelerator project will seek to develop and roll out a trusted platform where companies, including SMEs, universities, public bodies and other organisations can share, combine and experiment with data without any fear of compromising IP or data privacy and security;

Linking data innovators to next generation connectivity

Within each of Digital Catapult's challenge areas, labs and demonstrators will be established that provide easy access for UK innovators to emerging technology and services. This forms part of the centre's work to support the development of next generation connectivity, such as 5G and white space communications:

- The 5g Demonstrator that is supported by Digital Catapult will be the first large-scale, pilot/demonstrator for 5G telecommunications in the world.

2.5.Madrid Network Clusters

The Madrid Network Clusters is an example of a cluster initiative directed at generic business development and innovation, but which also pays attention to services. Madrid Network Clusters is a network promoted by the Region of Madrid, with support from the Chamber of Commerce and CEIM[11] and it aims to help businesses through innovation.[12]

The Madrid Network consists of some 700 partners including large and small companies, research centres and universities. These are grouped into 12 clusters and five technology parks in order to generate business and seek new opportunities through innovation. Nine of these clusters are specifically targeting services and include: ICT – Audiovisual; the Spanish Platform that has a language focus; Product Graphics; Health and Wellness; ICT and Safety; Tourism; Madrid Financial Centre; and the Logistics Platform.

Madrid Network offers businesses a portfolio that provides horizontal services to boost competitiveness and innovation throughout the Madrid region. By developing partnerships to share ideas, innovation and technology strategies, it provides easy access to major scientific markets. It also acts as a catalyst between companies, public funders and private investors from all levels and sectors and provides visibility for its members in Spain and abroad. It has recently updated its services to provide additional assistance to entrepreneurs in increasing their economic activity and to offer them new business opportunities.

Madrid Network Clusters uses the following tools to develop innovation in all of their members' businesses. There are few tools specifically aimed at service industries or service elements of other industries but a notable exception is the broad spectrum of IPR facilitation that covers trademarks and software rights directed at services:

[11] http://www.ceim.es/index.asp?seccion=326

[12] Madrid Network Clusters (2014)

Support tools of the Madrid Network Clusters

Finding finance

The Network offers a review of business plans prior to seeking finance, aid to businesses developing funding proposals and help in the search for sources of funding. The advice on finance is primarily aimed at start-ups and entrepreneurs that want to launch an innovative project and at established companies that are seeking to open new lines of business or enter new markets;

International network membership

Madrid Network facilitates help for its members to join international networks such as the Enterprise Europe Network (EEN) and Spain's European Chambers;

Intellectual property rights

Madrid Network advises its members on protecting intellectual property. This activity covers the complete management of industrial property such as trademarks, commercial names, patents and industrial designs, intellectual property like author or software copyright, internet domains, data protection and competitive intelligence issues;

Participation in European Projects

Madrid Network provides aid and advice to members who are considering participation in European projects. Madrid Network offers assistance in all phases of obtaining a grant, including the definition, preparation, presentation and implementation of European projects. In addition, it provides an analysis of the project concept and on-going advice on its implementation and the verification and justification of the expenditure of the grant received;

Advice on regional specialisation

Madrid Network offers advice to businesses that are attempting to develop such a specialisation. Any proposed strategy takes account of the specific characteristics, needs and business network potential of the area or region;

Events and presentations

Madrid Network hosts events and presentations related to all the above topics;

Technology transfer

Madrid Network facilitates links between universities, research centres and the business world in order to use the accumulated knowledge in academic and research institutions. It also operates multidisciplinary working groups that serve as catalysts for the transfer of ideas from research and science into businesses.

3. The Lessons Learned

This section summarises the observations, key points and lessons learned from the case studies, which should be kept in mind when planning future service innovation initiatives.

3.1. Defining 'Service innovation initiatives' as a target for policy

A key feature of the cluster initiatives discussed here is that they, to varying degrees, intervene in favour of innovation within services or in some cases, service elements in production industries. The premise is that innovation specific to services faces special challenges and requires a themed intervention to address them. While this may be so, the problems to be solved are not made explicit in the cluster initiatives described above and thus, it is not clear how they are to provide relevant solutions. This leaves at least four questions to be answered for future initiatives:

- Can service innovation be seen as a coherent and specific target for cluster policy?
- Are there generic and shared problems in service innovation to be solved, and what are they, specifically?
- Are these problems specific to, and shared by, businesses innovating in their services and could they be better solved through generic business policies or, conversely, through more industry specific business policies?
- Is a cluster initiative a pragmatic solution to these problems, and what and how would they solve it?

Simplicity of means and ends is needed to clearly answer these questions. Cluster initiatives could benefit from a simpler rationale, being more specific than stating the 'growing importance of services', 'harnessing untapped potential' and 'strengthening ecosystems'. Future initiatives would also benefit from a clearer definition of the tangible goals to be achieved or the specific problems to be solved. The initiatives studied here focus primarily on processes and methodology rather than the pragmatic outcomes they are meant to produce. Having considered the ends of these initiatives, we now turn to the tools they employ (their means).

3.2. New tools specific to service innovation

When considering new tools specific to service innovation, the two key questions are:

- What is special about promoting service innovation; and
- What new tools should be considered for the promotion of service innovation?

The cluster initiatives[13] outlined in the previous section employ a very wide range of tools directed at almost all parts of the value chain including: conception; IPR; entrepreneurship; finance; commercialisation; public-private partnerships; growth; employment; internationalisation and fundraising. Thus, a very significant portion of the general business policy 'tool box' is being deployed under the heading of service innovation. In addition, the cluster initiatives studied here contain some elements that relate to the looser term of 'network' or clustering. Fostering cross-sectoral collaboration, including between manufacturing and services sectors, is also an important way that has the potential to add value to cluster firms through service innovation. The European Cluster Observatory has, for example, published a report on 'Cluster Collaboration and Business Support Tools to Facilitate Entrepreneurship, Cross-sectoral Collaboration and Growth'. [14]

[13] According to the European Commission Staff Working Document SEC (2008) 2637 cluster initiatives are organised efforts to enhance the competitiveness of a cluster within a region, involving private businesses, public bodies and/or academic institutions within a regional and sectoral system

[14] Available at: http://ec.europa.eu/enterprise/initiatives/cluster/observatory/2014-10-10-eco-report-d4.1.pdf

Using the methodology applied by the EPISIS project (Tekes, 2012)[15], the cluster initiatives described above treat innovation in services in one of several ways:

- **As part of a general innovation policy**

  Madrid Network Clusters and Service Cluster Denmark are two examples of cluster initiatives that are to be seen as part of a general innovation policy approach. A broad spectrum of businesses, in service industries and other industries, is represented in the membership and well-known tools, with some adaptations, are employed to foster innovation in services;

- **As part of an industry-specific innovation policy**

  The Mobility and Multimedia Cluster and Catapult Centre are examples, in which businesses from selected service industries participate and specialised tools are employed to foster innovation in services;

- **As part of a technology-specific innovation policy:**

  Software-Cluster is a case in point, which focuses on the specific problems associated with the development of software.

In addition to these methods, cluster initiatives may also promote service innovation:

- **As part of a challenge-specific innovation policy**

  Cluster initiatives could, for instance, apply an approach similar to the Demola open innovation platform in order to help cluster firms to address specific problem areas in services, such as IPR, productivity and the human resources needed to stimulate innovation.

Case Demola – an open innovation platform

Demola is a publicly funded open innovation platform in which university students together with companies and education institutes develop product and service demo concepts (prototypes) to real-life problems. Demola was created in 2008 in a situation in which the technology-push and the mono-sector cluster model no longer responded to the changing needs of society and thus, it was necessary to rethink and 'open up' the innovation policy.

The first Demola was established in Tampere and since the concept has been successfully extended to Budapest (Hungary), Riga (Latvia), Vilnius (Lithuania), Maribor (Slovenia) as well as East and South Sweden and further expansion is expected.

The Demola platform brings together companies with real cases or problems to be solved, multidisciplinary teams of students and university staff and thus, acts as a catalyst for practical university-business co-creation. The basic logic behind the platform is that student teams get the immaterial rights of the results, which then can be purchased in pre-fixed prices by the participating companies or developed further by new spinoff companies. This gives students experience from real life business projects as part of their studies (participation is rewarded with credits for degree programmes at the university), whereas companies get new perspectives and ideas.

So far more than 2500 innovation community members and 170 companies have participated in approximately 530 projects of which majority have been claimed for business use.

Demola can be seen as a practical and challenge-driven approach to innovation policy and it also could be used as inspiration in cluster policy development. While currently companies

[15] Tekes (2012), European Policies and Instruments to Support Service Innovation, Final Report of Task Force 6, Service Innovation Policy Benchmarking, Synthesis of Results and 15 Country Reports

that operate with the Demola platform appear more randomly selected, cluster initiatives could apply such an approach to reach out to specific groups of SMEs as a target.

http://www.demola.net/

Based on the initiatives studied here, the tools used to foster service innovation are adaptations of well-known instruments, or highly specialised tools directed at specific industries (e.g. software). Following the developmental chain from conception to realisation, it is possible to identify five new, or newly adapted, tools to promote service innovation:

- **Novel network themes**

  Both the Madrid Network and Service Cluster Denmark contain interesting examples of new network themes for conception and partnering, which are specific to innovation in services. Examples include the Spanish Language Industries, Regional Specialisation and Finance and Insurance;

- **Facilitating access to finance for developing services**

  Some of the cluster initiatives studied offer advice on, or help in, raising money from public and private sources for innovation in services. Another example includes online project brokering in which innovators can find partners and funding sources of special relevance to services. These tools appear to be employed to address funding barriers to service development projects;

- **Service-related R&D**

  The five cluster initiatives promote the initialisation of R&D projects in service-related fields that do not fall under traditional product R&D. Examples include areas such as software, multimedia and finance;

- **Extended IPR facilitation**

  Some of the cluster initiatives studied have made extended provision for facilitating intellectual property rights. In addition to conventional patents and industrial designs, these initiatives include help with, and facilitation of, IPR for service innovators such as trademarks and commercial names and author and software copyrights, internet domains and data protection;

- **Service regulation issues**

  Other initiatives have included advice, guidance and expertise on regulatory issues closely related to services. One example is the special advisory work carried out by the Software Cluster on IT regulations.

Based on the experiences of the five cluster initiatives, innovation in services may not require a brand new set of specialised tools. Innovation in services may well be promoted by using existing tools that have been adapted to include a services dimension.

3.3.Cluster initiatives as sound public investments

There is no systematic impact analysis of the cluster initiatives described in Section 2, and results beyond ‘ongoing projects’, ‘number of participants’ and ‘activities conducted’ are hard to find.

Therefore, it is difficult to say which tools are the most appropriate.

For the purposes of extracting the lessons that have been learned, the scientific literature does contain some robust evidence of impact that is relevant to aspects of the cluster initiatives studied here. While these conclusions are not unique to services, they can to some extent be generalised to include services:

- **Network participation** appears to have a positive impact on entrepreneurs. Several quantitative impact studies indicate a positive impact on the survival, employment and productivity of entrepreneurs and their participation in networks [see Watson (2007), Brüderl et al. (1998) and a more comprehensive review by Pittaway et al. (2004)]. In addition, network participation can also have a positive impact on innovation, Pittaway et al. (2004), Laudry et al. (2002) and Nieto et al. (2007);
- Similarly, **cluster participation** appears to positively influence entrepreneurship and productivity and to increase the specialisation of businesses [see Madsen et al., Sternberg et al (2004) (2003) and Rosenthal et al. (2004)]. There is some uncertainty connected with these findings, as it is not clear whether businesses improve because they participate in clusters or if clusters simply attract businesses that are more successful. Rosenthal et al. (2004) and Combes et al. (2010) find that at least some of the positive impacts assigned to clusters are due to this type of natural selection. Some studies find that businesses in clusters are more innovative, [see Ard-Pieter de Man et al. (2005) and the European Commission's 2006 Innobarometer on cluster#s role in facilitating innovation in Europe], but a clear impact on innovation is not generally empirically supported Duranton et al. (2000). In addition, Martin et al. (2011) and Duranton (2011) find that it is not possible to *"create"* clusters from a *"bare field"*, while support of existing clusters is possible; here Delgado, Porter and Stern (2010, 2012) illustrate that clusters have positive impacts on entrepreneurship and that strong clusters contribute to higher employment growth, wages, number of firms and patenting. They also found evidence that they contribute to the emergence of new regional industries and growth in other industries and clusters in the region as well contribute to growth of similar clusters in adjacent regions – thereby pointing to the innovation spill-over effects both from a regional and industrial perspective. Related to this, the 2014 European Cluster Panorama of the European Cluster Observatory also shows that the 44 regional hotspots of ten emerging industries in Europe with a cross-sectoral focus account for 22% of Europe's population, 28% of its employment, and 37% of its total GDP and that these regions perform more strongly on a wide range of economic and innovation performance indicators than the average European region.
- **Advice** can positively affect entrepreneurs when they receive external counselling before, during and after the start-up phase. Specifically, entrepreneurial survival and turnover increases because of counseling [see e.g. Rotger et al. (2010), Chrisman et. al. (2005), Wren et al. (2002), and Robson et al (2000)]. Counselling may span a wide spectrum of topics, such as finance, marketing, strategy, recruiting and management.

While the existing literature does contain some positive and interesting evidence of impact, it rarely moves beyond the question of impact. It leaves questions of **effectiveness** (impacts relative to goals) and **efficiency** (impacts relative to cost) unanswered. Both are self-evidently important for the prioritisation and allocation of scarce public resources to this type of initiative. Therefore, as a final lesson learned, future cluster initiatives would benefit from a more strategic approach to considering their total economy, as a publicly funded initiative.

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