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ASSESSMENT OF THE SERVICE INNOVATION SYSTEM IN THE REGION OF BUCHAREST-ILFOV

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Abstract

Competitive economies display a pattern of regional clusters and networks, where innovation is stimulated by intensive interaction among industries and where knowledge intensive services play an important role in novelty creation and diffusion.

In order to catch up with the most competitive regions, the region of Bucharest-Ilfov needs to develop a service-inclusive innovation system, which in turn requires an adequate policy mix.

The main aim of this paper is to provide an assessment of the service innovation system in the Bucharest-Ilfov region, by confronting its current performance with the regional innovation policy context.

On one hand, we characterize the performance of the service innovation system in accordance with the methodology and the data provided by the European Service Innovation Scoreboard. On the other hand, using desk research and in-depth interviews with experts, we investigate the service innovation policy mix on conceptual grounds provided by the literature regarding the typology of service innovation policy approaches.

We find that the policy measures supporting innovation that are available in the Bucharest-Ilfov region are not specifically targeted to regional development priorities and are predominantly technology oriented. Policies are not systemic and ignore the potential of knowledge intensive business services to be a driver for innovation in the region.

This paper highlights the stakes of adopting a coherent regional innovation policy, designed systemically, and exploiting the full potential of knowledge-based services. Being aware of the current state of service innovation within the region and its potential, the stakeholders may benefit of the recommendations included within the paper.

Keywords: service innovation, knowledge intensive business services, innovation policy, regional development

JEL Classification: O32, O38, R58

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Background

Innovation is beyond being considered an isolated process, and it is rather generated and supported by a conglomerate that reunite political forces, exponents of the civil society, private actions, academic interest for the subject, and involvement of each citizen through the more frequent requests from the offer-side. Particularly, service innovation, according to Pim den Hertog (2010), is characterized as a multi-dimensional phenomenon, interdisciplinary, multi-party, which involves new combinations of technological and non-technological dimensions, and it may focus on various places where there is interaction between customers and business partners. The European bodies recognize service innovation as a promoter of innovation within the European economy, giving high credits to the knowledge intensive-services (KIS) that are considered to have the highest potential for innovation. In the case of knowledge-intensive services (KIS), knowledge represents both the main production factor and the offered good; their contribution to the stimulation of innovation being highlighted in various papers, such as den Hertog, 2000; Muller and Zenker, 2001.

The positive contribution of KIS to regional innovation performance was a subject debated in various papers that brought strong theoretical arguments, but empirical papers are scarce due to the lack of statistical data (Rodriguez and Camacho, 2010). As a pioneering paper in the area of empirical studies regarding the European regions, the research carried out by Rodriguez and Camacho showed that innovation and KIS are highly connected at the regional level, and that regional innovation efforts influence the presence of KIS. Moreover, the analysis (Rodriguez and Camacho, 2010) is revealing that KIS are mainly located in capital regions and that powerful clusters of KIS are developing where this particular sector is already representative, namely in the United Kingdom and the Netherlands. Emphasizing, as a subcategory of KIS, KIBS involve an in-depth interaction between supplier and user resulting cumulative learning, and an activity of consulting between the supplier and the client (Schricke, et al., 2012). KIBS are characterized by a permanent innovation process as these enterprises are focused on selling competencies and abilities rather than product-services (Sundbo and Gallouj, 2000). By their power of creating relationships among families of disciplines, KIBS are relevant for the economic development and development planning (Monnoyer, 2010).

The general framework of innovation within a nation, respectively region is mainly settled by the public authorities through the developed policies. The increase of the national, respectively regional competitiveness could be achieved by developing a systemic innovation policy mix that is already met in the top innovative European countries. Several authors (Edquist, 2006; Borrás and Edquist, 2013) sustain that an innovation policy mix can be regarded as systemic when various basic functions are fulfilled. Based on various studies (Hekkert, et al., 2007, Hekkert and Negro, 2009, Bergek, et al., 2008), Janssen and Castaldi (2015) are suggesting the following functions:

- creating knowledge (K),
- innovation – oriented competence building and consulting (C),
- creating organizations (O),
- finance for innovation (F),
- networking (N).

These will be used as referential along the current paper.

As a capital region of Romania, Bucharest-Ilfov is the most advanced among the eight NUTS 2 Romanian regions in terms of economic development and competitiveness. It has also the

structural patterns providing the best conditions for developing a powerful innovation system: spatial concentration of political and administrative bodies, large corporations' headquarters, research and higher education institutes. However, the innovation performances of the region are significantly below its potential, which justify preoccupation for developing a more systemic, service centered innovation policy framework.

This paper aims to highlight the shortcomings of current innovation policies and to provide arguments for a systemic approach in which the driving role of KIBS in regional innovation is recognized.

The paper is structured into two main parts: (i) a presentation of the current service innovation system and (ii) an analysis of the innovation policy mix. Each part includes general information, methodological considerations, data analysis, findings and discussion. Subsequently we make final remarks and synthesize the overall conclusions.

1. The service innovation system in the Bucharest-Ilfov region

Nowadays, the region of Bucharest-Ilfov is holding a service profile as it is positioned as a referential region for information technology and communication, advanced technology, transportation and logistics, financial services, wholesale and retail textiles and apparel, biotech, education and knowledge creation, media and publishing industry, telecom, and real estate. The services that experienced the most impressive growth rate in Bucharest-Ilfov by comparing the gross added value from year 2008 to 2012 are part of KIS, namely the 'financial intermediation and insurance' and 'real estate activities' (National Institute of Statistics, 2015).

The main challenge for the region of Bucharest-Ilfov is to foster the development of the existing industries by internalizing the top targets/achievements at international level through the stimulation of service innovation, and assure a coherent legislative framework that leads to the increase of regional competitiveness.

One may get a more precise characterization of the service innovation system in Bucharest-Ilfov region from the European Service Innovation Scoreboard (ESIS) that was developed under the coordination of the European Service Innovation Centre.

The main aim of ESIS is to "capture and demonstrate the impact of the 'transformative power' of service innovation" (Hollanders, 2015, p. 2). ESIS is composed of three main sets of indicators:

- **service innovation and its transformative power**, that is revealing the importance of service innovation in a region;
- **systemic functions and structural indicators**, that are useful tools for the assessment and development of regional policy;
- **general socio-economic situation**, dedicated to revealing the economic performance of a region.

Below we will analyze these three facets of the service innovation system for Bucharest-Ilfov region, in contrast with the average of all NUTS 2 regions in EU.

The transformative power of service innovation is captured by five dimensions measured by composite indices. The composition of each dimension is provided in Table no. 1, and the position of Bucharest Ilfov region in Figure no. 1.

**Table no. 1: Service innovation and its transformative power:
composition by dimensions and indicators**

	RO32	EU
Wider framework conditions		
Institutions	n/a	61.6
Macroeconomic stability	58.5	57.5
Infrastructure	26.1	37.7
Higher education/ Training and Lifelong Learning	67.4	64.7
Labour market efficiency	52.9	49.5
Market size	42.0	42.2
Business sophistication	53.7	47.6
It is important to try new and different things in life	n/a	42.1
It is important to think new ideas and being creative	n/a	52.8
Service innovation - input		
Innovation expenditures (% turnover) - KIBS	1.32	7.37
Innovation expenditures (% turnover) - Networking, connecting and brokerage	0.30	1.39
Innovation expenditures (% turnover) - Utilities and infrastructure services	0.32	0.75
Share of innovators cooperating with others	1.1	11.3
Employees with ISCED 5-6 (% all employees)	40.7	31.9
Business expenditure on R&D (BERD) (% GERD)	32.1	63.2
Researchers (% active population) - Business enterprise sector	0.25	0.39
Total R&D personnel (% active population) - Business enterprise sector	0.72	0.73
Service innovation - throughput		
Share of companies that introduced a service innovation	2.1	10.4
Product / Process innovators (%) - KIBS	12.1	51.2
Product / Process innovators (%) - Networking, connecting and brokerage	5.1	22.7
Product / Process innovators (%) - Utilities and infrastructure services	10.1	38.1
Marketing innovators (%) - KIBS	15.1	29.2
Marketing innovators (%) - Networking, connecting and brokerage services	10.5	15.8
Marketing innovators (%) - Utilities and infrastructure services	15.7	28.6
Organisational innovators (%) - KIBS	14.4	38.1
Organisational innovators (%) - Networking, connecting and brokerage services	13.2	20.6
Organisational innovators (%) - Utilities and infrastructure services	19.3	36.6
Service innovation - output		
Employment in service innovation intensive industries (% total employment)	11.14	4.92
Share of turnover of newly introduced innovations new to the market	1.14	4.64
Share of turnover of newly introduced innovations new to the firm	2.49	7.55
Outcomes		
Change in employment share - KIBS (%-point)	0.9	0.3
Change in employment share - Networking, connecting and brokerage (%-point)	-0.2	0.1
Change in employment share - Utilities and infrastructure services (%-point)	-0.4	0.0
Change in employment share in knowledge-intensive services (%-point)	1.2	1.2
Change in employment share in service innovation intensive industries (%-point)	-0.1	0.1
Labour productivity growth (%)	1.0	1.2

Note: For details regarding the definitions of indicators and sources of data please consult:

Hollanders, 2015, p. 19-20

Source: *ESIS, 2015*

The tables are reflecting the effective values of the indicators, while the figures capture the indexes corresponding to each dimension, obtained by processing the data in accordance to the maximum and minimum values registered at the regional level in EU.

As Figure no. 1 is showing, it is surprisingly that both 'service innovation-output' and 'outcomes' are quite similar to the EU27 average, while the areas of 'service innovation-input' and 'service innovation-throughput' have to be seriously improved within the region of Bucharest-Ilfov in order to reach the EU level. What arguments could be available in the situation in which a region has a very low level of inputs and throughputs, but high level for outputs and outcomes? Our opinion is that the region of Bucharest-Ilfov has a particular

profile attracting foreign investors which are using their own service innovation input within their businesses that may lead to high positive results for the region. Moreover, the imitation of service innovation could be much more easily to be done compared to the innovation imitation in the case of products.

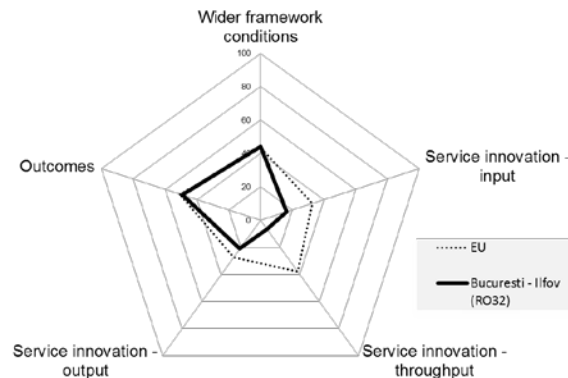


Figure no. 1: Transformative power of service innovation: profile of Bucharest-Ilfov region

Source of data: ESIS, 2015

The second layer of the analysis regards the systemic functions and structural indicators. The functional perspective on service innovation refers to the creation of knowledge, innovation as oriented competence and consulting, creating organizations, finance for innovation, and networking (Edquist, 2006; Borrás and Edquist, 2013).

The same functions are considered in ESIS, even if the terminology is slightly different (see Table no. 2).

The Bucharest-Ilfov region (see Figure no. 2) is below the European average in terms of entrepreneurial activities, in contrast with the fact that at the country level Romania is positioned above the EU average both in terms of share of self-employed people and labor productivity growth. This may be explained by the fact that in 2013 more than a quarter of Romanian large firms are situated in Bucharest-Ilfov (National Institute of Statistics, 2015). Consequently, this consistent share of big companies provides an important number of jobs opportunities that could be, at least for a beginner, more attractive than starting a business. In 2013 entrepreneurs had preferentially chosen to start new enterprises in services sector in the area of information and communication, financial intermediation and insurances, professional, scientific and technical activities etc. (National Institute of Statistics, 2015).

Knowledge development and transfer is a strong point of Bucharest-Ilfov that obtains for two out of the three indicators scores above the EU 27 average. An explanation for the high share of employees with higher education degree can be the intense concentration of universities within the capital city that is providing educated people that tend to settle in the area after finishing their studies and work within enterprises in the Bucharest-Ilfov region.

Table no. 2: Systemic functions and structural indicators

	RO32	EU
Entrepreneurial activities		
Share of self-employed people	5.9	15.1
Share of people who think it is important to try new and different things	n/a	42.1
Share of people who think it is important to being creative	n/a	52.8
Labour productivity growth	1.04	1.23
Knowledge development and transfer		
Share of employees with a higher education degree	40.7	31.9
Share of researchers among employees (business sector)	0.25	0.39
EPO high-tech patent applications	54.4	17.7
Innovation and business model generation		
Companies with service innovations	2.1	10.4
Employment share in medium-high-tech and high-tech manufacturing	2.2	5.6
Employment share in knowledge-intensive services	40.3	39.2
Employment share in service innovation intensive industries	11.14	4.92
Financing innovation and growth		
Gross Fixed Capital Formation	39.6	n/a
Total expenditure on R&D	1.08	1.97
Business expenditure on R&D	32.1	63.2
Share of innovating firms who received public financial support	1.3	8.8
Collaboration and networking		
Share of innovators collaborating with others	1.1	11.3
Specialisation in service-oriented clusters	1.5	1.0
Employment share in 2 and 3 star clusters	36.8	31.5

Note: For details regarding the definitions of indicators and sources of data please consult:

Hollanders, 2015 p. 19-20

Source: ESIS, 2015

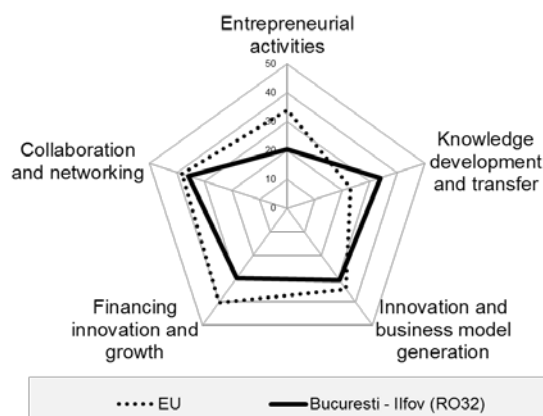


Figure no. 2: Systemic functions and structural indicators:
profile of Bucharest-Ilfov region

Source of data: ESIS, 2015

The weak point represented by the low share of researchers among employees within the business sector at both regional and national level in Romania may be due to the low use of the triple helix model where researchers have a relevant contribution. 9.3 applications per billion GDP to the European Patent Office were registered as coming from Bucharest in 2010, half of the total number of EPO applications in Romania, but extremely low number compared to the EU27 average, even though a high score in high-tech patent applications was registered in 2009 (ESIS, 2015).

The large number of patent applications of 2009 can be explained partially by the high-tech services sector that has boomed in the last years in the Region of Bucharest-Ilfov and the entrepreneurs' interest to protect their applications.

Innovation and business model generation reveals that the Bucharest-Ilfov region and Romania have a lot to catch up before reaching the EU average in terms of companies that generate service innovations. The high share of employment both in service innovation intensive industries and knowledge intensive services, and the low employment share in high-tech manufacturing compared to the EU average (ESIS, 2015) reinforce that Bucharest-Ilfov is a region dominated by the services sector and less dedicated to manufacturing. Adding innovative services to goods can be a great opportunity which manufacturing should take advantage of in order to increase their competitiveness and, overall, the score of the companies adopting service innovations would be higher.

The structural indicators associated to financing innovation and growth in the case of Bucharest-Ilfov are far behind the EU average, meaning that ways for improving the financing of innovation have to be found. Bucharest-Ilfov has potential to increase its business expenditure on R&D as many international companies from various domains, such as real estate, banking, software, are already on the market. The increase of the public financial support is more than welcomed, as currently only 1.3% of innovating firms in Bucharest-Ilfov receive it, compared to the EU average that is of 8.8% (ESIS, 2015).

Collaboration and networking is a function of the contrasts, where the Region of Bucharest-Ilfov is obtaining an impressive 'employment share in 2 and 3 star clusters' and a very low level for the 'share of innovators collaborating with others'. Specifically, the collaboration between innovators in the Region of Bucharest-Ilfov is almost lacking, but the employment in well qualified clusters is above the EU 27 average.

The general socio-economic situation of the Bucharest-Ilfov region is captured in Figure no. 3.

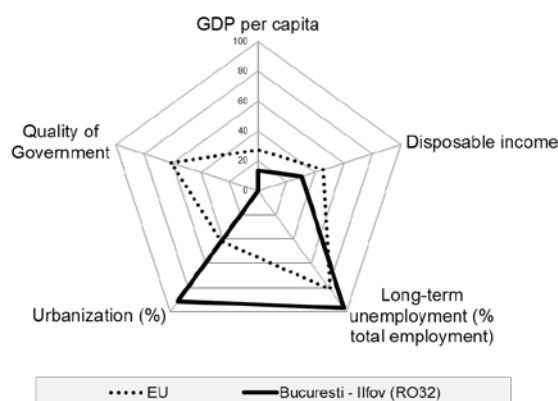


Figure no. 3: General socio-economic situation: profile of Bucharest-Ilfov region

Source of data: ESIS, 2015

The Region of Bucharest-Ilfov is holding some benefits, as it includes the capital city of Romania and it is a highly urbanized region, represented by the high number of public institutions and referential research institutes which support the area of R&D, and

implicitly service innovation. Practically, in the period 2008-2011, the public expenditures on R&D in the Region of Bucharest-Ilfov were 1.16% of GDP (EU27 regional public expenditures were 1.9%), more than the private expenditures of 0.35% of GDP (EU27 regional private expenditures were 1.2%).

2. Assessment of the service innovation policy mix in the Bucharest-Ilfov region

In Romania the innovation policy is set mainly at the national level. The current policy framework in terms of innovation is assured by the National Strategy of Research, Development and Innovation 2014-2020 (UEFSCDI, 2014), where several domains of smart specialization were nominalized, such as: bio economy related to agriculture and pharmaceuticals; information technology and communication, space and security; energy, environment and climate changes; eco-nano-technologies and advanced materials included within the Key Enabling Technologies that are based on research-development-innovation. The smart specialization is a challenge for Romania in relation to the geographic disparities between regions; as several regions of the country may not be prepared to develop the nominalized areas, and only some of them have the know-how to make it properly as it is the case of Bucharest-Ilfov region.

Particularly, several national authorities have established strategies which address innovation with different emphasis and from different perspectives:

- the Executive Unit for Higher Education, Research and Development and Innovation Funding (UEFSCDI) promotes Smart Specialization and triple helix cooperation;
- the Ministry of Regional Development and Public Administration of Romania points out in the draft version of the National Strategy for Regional Development 2014-2020 (MDRAP, 2013) that clusters are promoters of innovation, and particularly, service innovation is recognized as a valuable instrument for improving competitiveness both at national and regional levels;
- the Ministry of Economy adopted a National Strategy for Competitiveness 2014-2020, pointing out the relevancy of entrepreneurship, innovation and creativity for boosting competitiveness and emphasizing several strategic priorities which applied in practice may lead to positive effects;
- the Ministry of SMEs, Business Environment and Tourism has created a 'Governmental Strategy for the development of small and medium enterprises and the improvement of the business environment in Romania-Horizon 2020', where the importance of SMEs at the local level was highlighted. This strategy establishes five main directions focused on the support and promotion of entrepreneurship, access of SMEs to financing, innovative SMEs, access to markets and internationalization of SMEs, and the reactivation of public administration according to the needs of SMEs;
- the Agency for Implementation of Projects and Programs for Small and Medium Enterprises (AIPPIMM) manage publicly funded programs which encourage entrepreneurship and innovation.

All these strategies state goals which are to a small extent reflected by concrete measures, the latter being often poorly coordinated among departments and misfit against regional particularities.

At the level of Bucharest-Ilfov region (as for all the other Romanian regions) the responsibility for development planning belongs to the Regional Development Council and its executive agency, The Bucharest-Ilfov Regional Development Agency (ADRBI). The regional development plan includes measures combining regional planning with RDI, being expected that these measures will be performed jointly by the local authorities and other stakeholders with the aim to integrate public and private investments. The RDI plays a strong role within the 2014-2020 Regional Development Plan and boosts the innovation policy trend.

ADRBI has also proposed a Regional Innovation Strategy (RIS) in early 2000s, but the document was not perceived as mandatory due to the lack of a formal framework for regional innovation.

Overall, “Romania has no regional innovation authorities and no regional innovation policies... The regions do not have a role in innovation policy-making” (Aranga, 2012, p.5).

However, even in the absence of a coherent and consistent approach, a number of national public policies have been implemented – including also Bucharest-Ilfov region - and laid the framework for stimulating and supporting innovation in recent years.

The purpose of this section is to assess the service-inclusiveness of the innovation policy mixes adopted at the Bucharest-Ilfov regional level.

Policy measures and instruments have to be considered jointly (Flanagan, et al., 2011; Edquist, 2014) in order to reach a systemic state by combining them into mixes that refer to innovation (Borrás and Edquist, 2013).

Scholars have identified three main approaches to service innovation policy, corresponding to a certain evolution, from accepting that services are eligible for the support of innovation measures, to the design of instruments specifically targeted to services – taking into consideration the characteristics that differentiate service provision from goods production, and then to a stage where policies address innovation as a result of service-product complex interactions. The three approaches were called: (i) assimilation, (ii) demarcation and (iii) synthesis (Den Hertog, 2010).

The 'synthesis' approach can be considered as the most appropriate approach in line with systemic policy (Rubalcaba, 2006; Den Hertog, et al., 2010).

More recently, Janssen and Castaldi (2015) are proposing to separate the synthesis approach into a 'pre-synthesis' and a 'post-synthesis' phase. The 'post-synthesis' is assimilated to the 'synthesis' approach in which services are integrated issues and innovation in goods and services are overlapping, while the 'pre-synthesis' promotes the incorporation of service-specific insights into the larger sphere of service innovation knowledge (Janssen and Castaldi, 2015).

The last mentioned authors also designed a methodology for mapping the 'service-inclusiveness' of a certain policy mix that refers to two dimensions: one is dedicated to measuring whether a particular measure is associated either to goods or services, and the second regards the theme of the policy whether generic or specific. Explicitly, the specialized-good policy instruments have a sectoral focus; the neutral goods-based policy instruments refer to more general sectors; specialized service-based policy instruments are related to a particular kind of intangibles; and neutral service-based policy instruments address knowledge development and transfer. Precisely, the identified policy measures will

be included within the map reflecting the two dimensions mentioned before from general to specific on the vertical axis, and from goods to services on the horizontal axis. Finally, the map is completed by indicating the systemic functions of the service innovation system addressed by each policy measure.

We have applied the mapping of service-inclusiveness methodology to the innovation policy mix in the Bucharest-Ilfov region. We have identified all policy measures susceptible to support service innovation, either directly or indirectly. We have analyzed each measure in accordance with the classification criteria provided by the methodology described above. The results are summarized in Table no. 3.

**Table no. 3: Policy instruments related to innovation identified
for the Region of Bucharest-Ilfov**

Service innovation approach	Policy instruments identified in Bucharest-Ilfov region	Systemic function*				
		K	C	O	F	N
Assimilation Neutral measures which cover technological and service innovation on equal basis	PRO SME BISNET (Support to enterprises affiliated to Enterprise Europe Network) by ADRBI	✓	✓			✓
	EUROPROC (EU Regional Cooperation for SMEs access to Public Procurement) by ADRBI	✓	✓			✓
	MANTREP (Improving the quality and internal capacity of enterprises through entrepreneurship) by ADRBI	✓				
	TR3S (Towards Regional specialization for Smart Growth) by ADRBI	✓	✓			✓
	IDEI (Ideas) by UEFISCDI					
	INOVARE (Innovation) by UEFISCDI	✓	✓			✓
	CAPACITATI (Capacities) by UEFISCDI	✓	✓			
	EMPRETEC Program by AIPPIIMM	✓				
	ROMANIA-HUB Program by AIPPIIMM	✓				
	INCUBATOARE (Incubators) Program by AIPPIIMM			✓	✓	
	Tineri DEBUTANTI (Young Entrepreneurs) by AIPPIIMM			✓		
	FEMEIA MANAGER (Woman Manager) Program by AIPPIIMM			✓		
	START Program by AIPPIIMM	✓		✓	✓	
	Investments for the R&D departments of enterprises by ANCSI				✓	
	Projects for innovative clusters by ANCSI		✓		✓	✓
	Investment projects for public institutions of R&D/ universities by ANCSI				✓	
	Projects for the development of a network of R&D centers, coordinated at the national level and linked to European and international networks by ANCSI				✓	✓
	Projects for the creation of synergies with the RDI actions of Horizon 2020 and other RDI international programs by ANCSI				✓	✓
	Projects for innovative enterprises of start-up and spin-off type by ANCSI		✓		✓	
	Projects for new innovative enterprises regarding product and process innovation by ANCSI		✓		✓	
	Projects related to credit instruments and measures of risk capital in favor of innovative SMEs and research organizations by ANCSI				✓	
Demarcation	Goods- focused	Innovative Technological Project by ANCSI	✓			✓
	Service- focused	COMERT SERVICII (Commerce-services) Program by AIPPIIMM (F)				✓
Pre-synthesis Cross-sector Goods + serv.						

Service innovation approach	Policy instruments identified in Bucharest-Ilfov region	Systemic function*				
		K	C	O	F	N
Post-synthesis Thematic progr. Goods & serv.	PARTENERIATE (Partnerships) by UEFISCDI (K, C, F, N)	✓	✓		✓	✓
	Partnerships for knowledge transfer by ANCSI	✓	✓			✓

Note: *) Service innovation systemic functions: K = creating knowledge; C = innovation-oriented competence building and consulting; O = creating organizations; F = finance for innovation; N = networking

As one may see in Figure no. 4 the innovation policy mix in the Bucharest-Ilfov exhibits the characteristics of the assimilation approach. The policy measures are conceived in general terms and do not account for differences between the needs in the goods sectors (technological innovation) and service sectors (knowledge creation), nor do they consider the reality of goods-services integration. From an evolutionary perspective this is just the primary stage in developing a service inclusive innovation policy. All systemic functions are met, even though there is a quite unbalanced proportion between them. Studies conducted by Rubalcaba (2006) and Den Hertog, et al. (2010) enforce that introducing service-goods integration at the level of individual measures is a prerequisite for achieving a systemic policy. Particularly, the Region of Bucharest-Ilfov should make the shift from assimilation to the pre-synthesis approach as soon as possible.

Practically, the policy makers should focus on developing a systemic innovation policy where initiatives based on service innovation addressing all the systemic functions are a priority. Within Figure no. 4, the area of the circles indicate the share distributed between different approaches in terms of the number of projects corresponding to each approach, with no connection to the financial effort. Consequently, the imbalances that are resulting from the figure are mainly a reflection of the lack of clear vision and priorities related to service innovation.

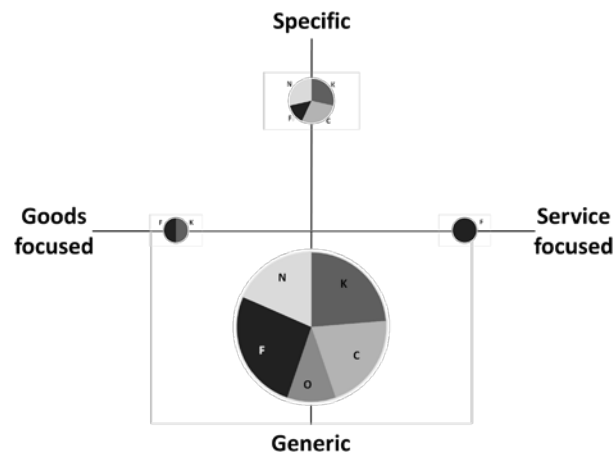


Figure no. 4: Map of Bucharest-Ilfov service innovation policies

Source: Own representation; model suggested by Janssen and Castaldi, 2015

For a deeper analysis on the regional policy mix, several interviews with experts in innovation have been carried out. Two experts from academia, and two from the civil society, and one expert from a representative public institution have provided their answers to the Self-Assessment Tool (SAT) questions within the period April-May 2015. Apart of the introductory questions that were addressed to the five interviewees, the SAT test was applied in four cases. The SAT is an on-line questionnaire developed by the European Service Innovation Centre (ESIC), which contains 15 questions distributed into five categories related to the service innovation systemic functions.

The answers to the SAT questions were scored within the dedicated platform on the ESIC's website. By filling in the questionnaire for each respondent, an individual form with the interpretation of the results was generated. The results offered a picture on whether the regional innovation policy has adopted a systemic approach integrating the potential of service innovation. In relation to the previous section, the experts' answers are connected to the policy approaches.

The opinions of three out of the four experts that have filled in the questionnaire corresponding to SAT are showing that the innovation policy in the Region of Bucharest-Ilfov follows a technological approach, meaning that the support to service innovation in the policy mix is lacking. Even though the situation is not so optimistic regarding the inclusiveness of service innovation of the regional policy mix, recently several policy measures were adapted or designed to support services or service innovation. Progress towards the demarcation approach could be noticed, where services and service innovation are supported mainly through vertical policy measures that are specific for individual service sectors. The obtained results enforce the conclusions of the previous section, namely that most of the policy instruments related to innovation from the region of Bucharest-Ilfov are positioned within the *assimilation* type of service innovation approach.

The overall recommendation based on the SAT results for the regional innovation policy is to exploit the potential in service innovation, by developing a systemic approach on innovation, where interrelations between technological and service innovation are developed, and to better link manufacturing to service industries.

Apart from this overall evaluation of the experts' opinions, the SAT results provide a spider diagram that is illustrating the policy approach of each expert in relation to the five categories included within the European Service Innovation Scoreboard, namely: 'knowledge development and transfer', 'innovation and business model generation', 'financing innovation and growth', 'collaboration and networking', and 'entrepreneurial activities'. Based on the results obtained from the experts' interviews, the three most appreciated dimensions in Bucharest-Ilfov were 'collaboration and networking', 'entrepreneurial activities', and 'knowledge development and transfer'; even though they have registered low values, around 1.4 out of the maximum of 4 according to the scale. Consequently, more attention should be placed on the three mentioned functions, and representative actions should be carried out for improving the other two dimensions of 'innovation and the generation of business model', and the 'financing of innovation and growth'.

The ideal situation would be that a region to be characterized by a systemic approach, where the goods-based and service-based innovation is combined, leading to the creation of structures and incentives that optimize the functioning of the entire innovation system (ESIC, 2014). Considering this aspect, the Region of the Bucharest-Ilfov has to evolve from

the neutral measures that are mostly focused on technology to a holistic approach where service innovation is promoted individually or integrated in manufacturing.

In order to reach the pre-synthesis approach the development of modern structures of collaboration between various stakeholders has to be essential. One main recommendation for the Region of Bucharest-Ilfov is to focus on supporting and creating clusters within the strongest and the most competitive areas of the region. The wide variety of clusters within a region needs to be avoided because, if not, the policy makers may have to deal with the dissipation of resources in various directions, without achieving superior performance in a particular one. Apart of clusters, structures supporting businesses, such as science parks and business incubators, are recognized as having a positive effect on the economic development of the regions, and implicitly on the early stage of the SMEs development.

Generally, the focus of the innovation policies should be placed on creating the right framework conditions by developing knowledge infrastructure, innovative networking between SMEs, as well as clustering in those areas where the regional economy holds its strengths. A holistic approach for the stimulation of the transformative power of service innovation implies developing simultaneously measures to the company level; sectoral, business environment level; and the market level. A snapshot on several main support instruments at each of the mentioned levels is included within the report elaborated by European Commission in 2012, entitled 'The Smart Guide to Service Innovation' (European Commission, 2012).

The necessity of a coherent package of public policies that are going in the same direction to achieve a well settled objective is also the main recommendation that one of the consulted experts has pointed out. Additionally, he highlighted the importance of a reform in public administration related to strong planning tools. A coherent framework could be obtained through interconnected policy measures that follow a precise and common objective focused on increasing regional competitiveness through service innovation. A practical way would be developing powerful clusters within the most representative domains of the region that are sustained by a solid legal framework.

Particularly in the case of the knowledge intensive business services, a framework that would support the development of a powerful business services market should combine "regulatory and self-regulatory instruments, public and private initiatives and institutional capacities, horizontal and sector specific actors and mechanisms" (Tăchiciu, et al., 2011, p. 721).

Overall, several broad recommendations for enhancing the regional awareness of service innovation that came up based on the discussions carried out with the experts refer to:

- developing competences to innovate among the stakeholders;
- developing a network communication system through clusters;
- integration of the education environment with the business sector;
- active involvement of local authorities in developing common projects with the university and private sector;
- developing connections between big enterprises and suppliers by creating a platform to support and stimulate the suppliers to innovate;
- offering models of innovation management systems.

Conclusions

Innovation is the most important factor for increasing regional competitiveness. Currently, more than in the past, innovation requires the ability to develop and put together expert knowledge from different fields and manage a multidisciplinary effort. In this regard, KIS and in particular KIBS have an important role to play. At the same time, it is recognized that service innovation stimulates and supports innovation in all other industries, either manufacturing or services. The prosperity of a region depends on how development policies are working together to promote innovation, while reflecting the region's particularities in terms of resources and development priorities. Furthermore, it is important how service innovation is integrated within the set of policies: by assimilation, demarcation, or by recognizing interactions between activities that define the region's economic structure. A systemic policy should promote regional smart specialization and a synthesis approach to service innovation aimed precisely to enhancing the synergistic interaction between service innovation and technological innovation.

Analyzing the service innovation system at the level of Bucharest-Ilfov region, we noted the absence of any regional innovation policy, a situation partly compensated by general national innovation policies, the high percentage of the active population with tertiary education and the concentration of knowledge intensive activities. The latter are a consequence of the status of capital of the country that Bucharest has, in such a quality being home for main institutions of the central government, many important universities and the headquarters of major corporations active in Romania. Despite its privileged status, the innovation system exhibits numerous imbalances and shortcomings, because of the absence of systemic policies at regional level. Of these, the most obvious are low levels of investment in innovation and low level of entrepreneurship.

The assessment of the service-inclusiveness of the policy mix has provided an overview on the policy measures dedicated to stimulating service innovation and it is showing that the Region of Bucharest-Ilfov is following a predominant assimilation approach. For a proper development of the pre-synthesis approach in the case of the Region of Bucharest-Ilfov a more equilibrated situation in terms of the innovation functions should be assured by the authorities developing policy measures in the area of service innovation. The redundant support for the same function of the policy measures and the fuzzy complementarity between them are the major minuses that the Romanian authorities have to face when developing the policy mix centered on service innovation.

As the analysis on the policy mix indicates a dominant technological approach it means that the service innovation is tangentially considered within the existing policy measures within the region of Bucharest-Ilfov. On the map, most of the policy measures are positioned within the sphere of 'generic' function with trends towards services and service innovation in several particular sectors. Strategies and programs on competitiveness, innovation and others related are nominalizing top fields of the region of Bucharest-Ilfov where energies are worth investing; the fields either regard areas where the region is already massively expanding (e.g. wholesale and retail; information technology and communication, space and security; transportation and logistics; professional, scientific and technical activities; activities of administrative services of support services; financial intermediation and insurance), or their huge potential and capacity is under development (e.g. advanced technology; biotechnologies; materials, innovative processes and products).

Before developing regional measures supporting innovation, including service innovation, a coherent innovation policy is required in the case of Romania, and implicitly at the regional level of the Region of Bucharest-Ilfov. Developing a coherent innovation policy is based on solving the dysfunctions of the public administration in harmonizing the strategic documents, and dealing with the lack of connection between the budgets and would-be development strategies.

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Appendix

Four systemic approaches to service innovation

Janssen&Castaldi based on Edquist, 2005; Borrás and Edquist, 2013; Hekkert et al., 2007

