

European Service
Innovation Centre

ESIC newsletter



ONE OF THE MAIN OBJECTIVES of the European Service Innovation Centre has been the development of a European Service Innovation Scoreboard that can measure the impact of service innovation. This involves the introduction of a data set of indicators that can reveal the real role of services at national and regional levels – a role or a contribution that had previously been hidden or, in essence, undetectable. In this interview with the ESIC Newsletter, Hugo Hollanders from the Maastricht Economic Research Institute on Innovation and Technology (MERIT) outlines the aim and the methodology behind this European Service Innovation Scoreboard (ESIS).

What is the rationale behind the European Service Innovation Scoreboard?

The aim of the European Service Innovation Scoreboard is to capture and demonstrate the impact of the transformative power of service innovation. This transformative power was a concept introduced by the Expert Panel on Service Innovation in the EU¹ and the panel explained that service innovation has “the potential to profoundly change the innovative potential of other sectors and catalyse the drive towards economic growth”.

Thus, our ambitious task was to provide a stable and common set of useable and replicable indicators that was capable of identifying

and benchmarking the transformative power of service innovation. Work on ESIS has included creating a methodological proposal including indicator systems, organising a validation workshop in Brussels and then adjusting the methodological framework in accordance with the recommendations of the workshop. These activities, conducted over the past year, have resulted in a pilot version of ESIS published in June 2014.

Were you able to demonstrate the impact of service innovation?

The question of service innovation and its impact is a complex issue, which is not easily detectable through significant correlations or similar procedures. There are several reasons for this. First of all, innovation as such, and service

In brief

The overall objective of the European Service Innovation Centre (ESIC) is to improve awareness amongst policy-makers at European, national and regional levels, of the contribution of service innovation and service firms to economic development.

The goals of ESIC are to:

- Capture and demonstrate the dynamics and large-scale impact of service innovation;
- Provide customised advice to selected model demonstrator regions; and
- Promote, and raise awareness of, the role and impact of service innovation.

Please find further information at:
ec.europa.eu/enterprise/initiatives/esic

¹ http://ec.europa.eu/enterprise/newsroom/cf/itemdetail.cfm?item_id=7301&lang=en&tpa_id=0



THE EUROPEAN SERVICE INNOVATION SCOREBOARD

innovation in particular, cannot be measured with one-dimensional indicators. Secondly, service innovations are not necessarily 'stand-alone results' that are sold on the market, as they are often incorporated in further economic processes. Additionally, it is difficult to determine the exclusive effects of service innovation on economic development and structural change. We tried to consider these issues in our methodological framework and to differentiate between input, throughput, output and outcome.

This helps to clarify that service innovation should not be seen 'in isolation' but should rather be recognised as being strongly integrated into the economic structures and processes of countries and regions. Therefore, it seems logical that there are several development paths and that European nations and their regions should develop diverse models, depending on their structures and contexts. So some countries might

focus more on service activities and service innovation, whilst others might have a wider focus on manufacturing and a third group might be very strong in both fields.

What are the main differences across the EU?

Our analyses enabled us to draw some general conclusions. For instance, indicators reveal that there is a variety of situations across Europe at Member States and regional levels, particularly with respect to innovation input, throughput and output. Comparing the ESIS findings with the results of the European Union Innovation Scoreboard underlines the fact that European innovation leaders rank highly on the ESIS input, throughput and output dimensions. However, we can also see that some other Member States rank highly on these dimensions. This might reflect the different development paths that have been mentioned before



Service innovations can hardly be measured with one-dimensional indicators.

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and additionally there is a certain time lag in measuring the results of service innovation.

Previous analyses have also shown that service sectors are of considerable importance to national economies in Europe, as their output is used by other economic actors. We were able to find positive associations between the input of selected service fields in other sectors and variables like the GDP per inhabitant or exports. An additional factor, which should not be neglected, is that firms in these sectors provide highly-skilled jobs and we also found indications of positive firm dynamics and high-growth firm shares over the past years.

How do the main differences correlate with ESIC's work in the model demonstrator regions?

The ESIS indicators have underpinned evaluations of the regional performance and the potential of service innovation in each of the six model demonstrator regions. These evaluations analysed the current state of the framework conditions in which companies operate and the inputs into, and outputs from, service innovation. As the indicators provide an objective overview of the regional innovation systems, the results can be compared and also used to formulate future policies.

From our point of view, the main strength of the Scoreboard is to give regions and Member States a more detailed picture of what happens in their territories, at least of issues which are measurable through the available statistics. The comparison of this data with qualitative information can be considered as being a useful tool to monitor existing activities and policies and to define strategies and milestones for the future. In this respect, the comparison of quantitative and qualitative information gathered by ESIC, through the accompaniment of

the six demonstrator regions and the visits to these regions, which included regular exchanges with their key actors, is a valuable input and a particularly solid base for innovation policies.

What are the main elements of ESIS and what kind of data is being provided?

ESIS contains a wide range of data which had not previously been collected on a systematic basis. In addition to the indicators that focus on the service sector and its innovative activities, ESIS also contains selected indicators that can assist in the analysis of structural change. These include, for instance, Gross Domestic Product (GDP), the percentage of the workforce that represents highly educated people and the share of Knowledge-Intensive Business Services (KIBS).

Official Eurostat data has been used for

many indicators but collecting regional data on service innovation has been a major challenge. Firm level data on innovation activities is collected by the Community Innovation Survey (CIS) but for most countries CIS data is only made available at national level. For ESIS, we developed a methodology to estimate regional CIS data by combining national CIS data at the industry level and by assuming that innovation intensities at the national level also hold true for the regional level. This methodology was also validated by external experts during the workshop in Brussels that was mentioned above. The methodology of ESIS has been captured in a report, which lays out the framework for the measurement and analysis of service innovation, its transformative power and the resulting structural change.

ESIS presents a statistical profile of the



Hugo Hollanders



model demonstrator regions, showing their performance in relation to each of the indicators and comparing it with overall EU performance. These profiles demonstrate the relative strengths and weaknesses of the regions and highlight potential areas for the formulation of new policies that aim to improve the impact of service innovation.

What are the similarities and differences between the European Service Innovation Scoreboard and the Innovation Union Scoreboard?

The EU's main innovation benchmarking tool is the Innovation Union Scoreboard (IUS), which monitors the innovation performance of the EU Member States. The most recent IUS was published on 3 March 2014². IUS focuses on the country level and measures innovation in its broadest sense – from manufacturing industries to services – and includes both technological and non-technological innovation.

The European Service Innovation Scoreboard (ESIS) contributes to the implementation of the Innovation Union and complements the Innovation Union Scoreboard by concentrating on service innovation at both the national and regional levels. The comparison provides a similar picture in terms of the framework conditions and inputs and throughputs of service innovation but offers a different picture for the outputs of service innovation and its outcomes. Most of the indicators used in both ESIS and IUS are 'stock indicators' and capture the most recent levels of inputs and throughputs of the innovation process. The fact that both show similar results confirms that service innovation accounts for a significant share of overall innovation performance, as measured in the IUS. However, outcomes in ESIS use 'flow indicators' which measure changes over time with the 'less performing' countries more likely to register faster change. The fact that neither the levels of service innovation nor of overall innovation are linked to outcomes can easily be explained, as high performing countries will show a below average change and low performing countries an above average change.

How does the Scoreboard help policy-makers to improve regional innovation systems and their related policies?

ESIS can help policy-makers by informing them about the strength of service innovation in their regions and, in particular, in the three service industries identified by the Expert Panel as having the transformative power to change other industries. These three service industries are:

- Knowledge intensive business services;
- Networking, connecting and brokerage services; and
- Utilities and infrastructure services.

ESIS includes several indicators to measure both the presence of these industries in a region and the intensity of innovation taking place in each of the industries. ESIS

also provides statistical information on the framework conditions for innovation, in general, and service innovation, in particular, on the outcomes of service innovation. ESIS should ideally be combined with a qualitative appraisal of the strengths and weaknesses of a region as is being provided by the ESIC consortium in each of the six demonstrator regions. The ESIC Self-assessment tool (SAT) has also compared the regional policy-makers' views of the policy mix with quantitative ESIS data. This helps to ensure that policies are developed to improve performance, especially in relation to those weaknesses which are assumed by policy-makers to limit the development of each of their regions. An update of ESIS, using more recent data and covering several non-EU regions and countries, has been scheduled for later this year. ■



ESIS contains a wide range of data which has not previously been collected on a systemic basis. ESIS provides statistical information e.g. on the outcomes of service innovation, and on the framework conditions needed for innovation.

² http://ec.europa.eu/enterprise/policies/innovation/policy/innovation-scoreboard/index_en.htm



Explaining the Scoreboard Methodology, including its Scorecards and Indicators

THE EUROPEAN SERVICE INNOVATION SCOREBOARD consists of three scorecards each serving a different purpose. The scorecards highlight:

1. The importance of the transformative power of service innovation in a region;
2. Structural indicators that can be used as tools in regional policy making; and
3. Indicators measuring the economic performance of a region that capture the overall results of policies, innovation and business activities.

1. ESIS Scorecard for service innovation and its transformative power

The first set of indicators measures the **importance of service innovation** in a region. The indicators are presented in a similar way to the Innovation Union Scoreboard with indicators grouped into five dimensions. The first dimension measures framework conditions, which are defined as those factors external to a firm that drive and shape the innovation

WIDER FRAMEWORK CONDITIONS	SERVICE INNOVATION: INPUT	SERVICE INNOVATION: THROUGHPUT	SERVICE INNOVATION: OUTPUT	OUTCOMES
(Quality of) Institutions (composite indicator, range from 1 to 100)	Innovation expenditures in Knowledge intensive business services (% share of turnover)	Share of companies that introduced a service innovation (% of all firms)	Employment share in service innovation intensive industries (% total employment)	Change in employment share in Knowledge intensive business services
Macroeconomic stability (composite indicator, range from 1 to 100)	Innovation expenditures in Networking, connecting and brokerage services (% share of turnover)	Share of Product /Process innovators in Knowledge intensive business services (% of all firms)	Turnover share of newly introduced innovations to the market (%)	Change in employment share in Networking, connecting and brokerage services
(Availability of) Infrastructure (composite indicator, range from 1 to 100)	Innovation expenditures in Utilities and infrastructure services (% share of turnover)	Share of Product /Process innovators in Networking, connecting and brokerage services (% of all firms)	Turnover share of newly introduced innovations to the firm (%)	Change in employment share in Utilities and infrastructure services
Higher Education/ Training and Lifelong Learning (composite indicator, range from 1 to 100)	Share of innovators cooperating with others (%)	Share of Product /Process innovators in Utilities and infrastructure services (% of all firms)		Change in employment share in knowledge-intensive services
Labour market efficiency (composite indicator, range from 1 to 100)	Share of employees with a higher education degree (%)	Share of Marketing innovators in Knowledge intensive business services (% of all firms)		Change in employment share in service innovation intensive industries
Market size (composite indicator, range from 1 to 100)	Business expenditure on R&D (% share of GDP)	Share of Marketing innovators in Networking, connecting and brokerage services (% of all firms)		Labour productivity growth
Business sophistication (composite indicator, range from 1 to 100)	Researchers in business enterprise sector (% share of all employees)	Share of Marketing innovators in Utilities and infrastructure services (% of all firms)		
Share of people who think it is important to try new and different things in life (%)	Total R&D personnel in business enterprise sector (% share of all employees)	Share of Organisational innovators in Knowledge intensive business services (% of all firms)		
Share of people who think it is important to think new ideas and be creative (%)		Share of Organisational innovators in Networking, connecting and brokerage services (% of all firms)		
		Share of Organisational innovators in Utilities and infrastructure services (% of all firms)		

Table 1: ESIS indicators measuring service innovation



ENTREPRENEURIAL ACTIVITIES	KNOWLEDGE DEVELOPMENT AND TRANSFER	INNOVATION AND BUSINESS MODEL GENERATION	FINANCING INNOVATION AND GROWTH	COLLABORATION AND NETWORKING
Share of self-employed people (%)	Share of employees with a higher education degree (%)	Share of companies with service innovations (% of all companies)	Gross Fixed Capital Formation (% share of GDP)	Share of innovating firms collaborating with others (%)
Share of people who think it is important to try new and different things in life (%)	Researchers in business enterprise sector (% share of all employees)	Employment share in medium-high-tech and high-tech manufacturing (% of total employment)	Total expenditure on R&D (% share of GDP)	Specialisation in service-oriented clusters (location quotient)
Share of people who think it is important to think new ideas and be creative (%)	European Patent Office high-tech patent applications (% share of all EPO patent applications)	Employment share in knowledge-intensive services (% of total employment)	Business expenditure on R&D (% share of GDP)	Share of employment in 2 and 3 star clusters (as measured by the European Cluster Observatory) (% of total employment)
Labour productivity growth		Employment share in service innovation intensive industries (% of total employment)	Share of innovating firms that received public financial support (%)	

Table 2: ESIS structural indicators



activity of firms and influence their innovation performance and subsequent market success. These factors are outside the reach or influence of a single firm, or even a group of firms, and are usually issues to be addressed by policies. They represent the interface at which the innovation activities of firms are subsequently revealed in macro measurements of the structural change within a region or a sector.

Service innovation is conceived of as comprising three closely connected elements: inputs into the innovation; the actual innovation throughput; and outputs to the market. Inputs are the deliberate development of service innovation. The service innovation is developed for a purpose and the innovation process is intentional. Hence, it did not 'just happen' as in a case that might be characterised as evolution rather than innovation. Throughputs are the new development themselves and output is the value created. This can be value to the company or the customer. If no value is created, then it will not be considered to be a service innovation. Outcomes capture structural change, which is the impact of the transformative power of service innovation.

2. ESIS Scorecard for systemic functions and structural indicators

The second set consists of **structural indicators** that can be used as a tool in regional policy

making. This set takes a broader approach and focuses on more general dimensions that are relevant to measuring entrepreneurial, high-tech and business activities in a region. As these more general dimensions also include service innovation activities, there is a small overlap between the first and second sets of indicators but this enables individual, and also complete sets of, indicators to be exploited that relate to the specific focus or interest of the user.

3. ESIS Scorecard for the general socio-economic situation

The third set of indicators provides a summary of the **economic performance** of a region capturing the overall results of its policies, innovation and business activities. This scorecard includes indicators measuring the level of per capita income, disposable income, long-term unemployment, the degree of urbanisation and the quality of regional government.

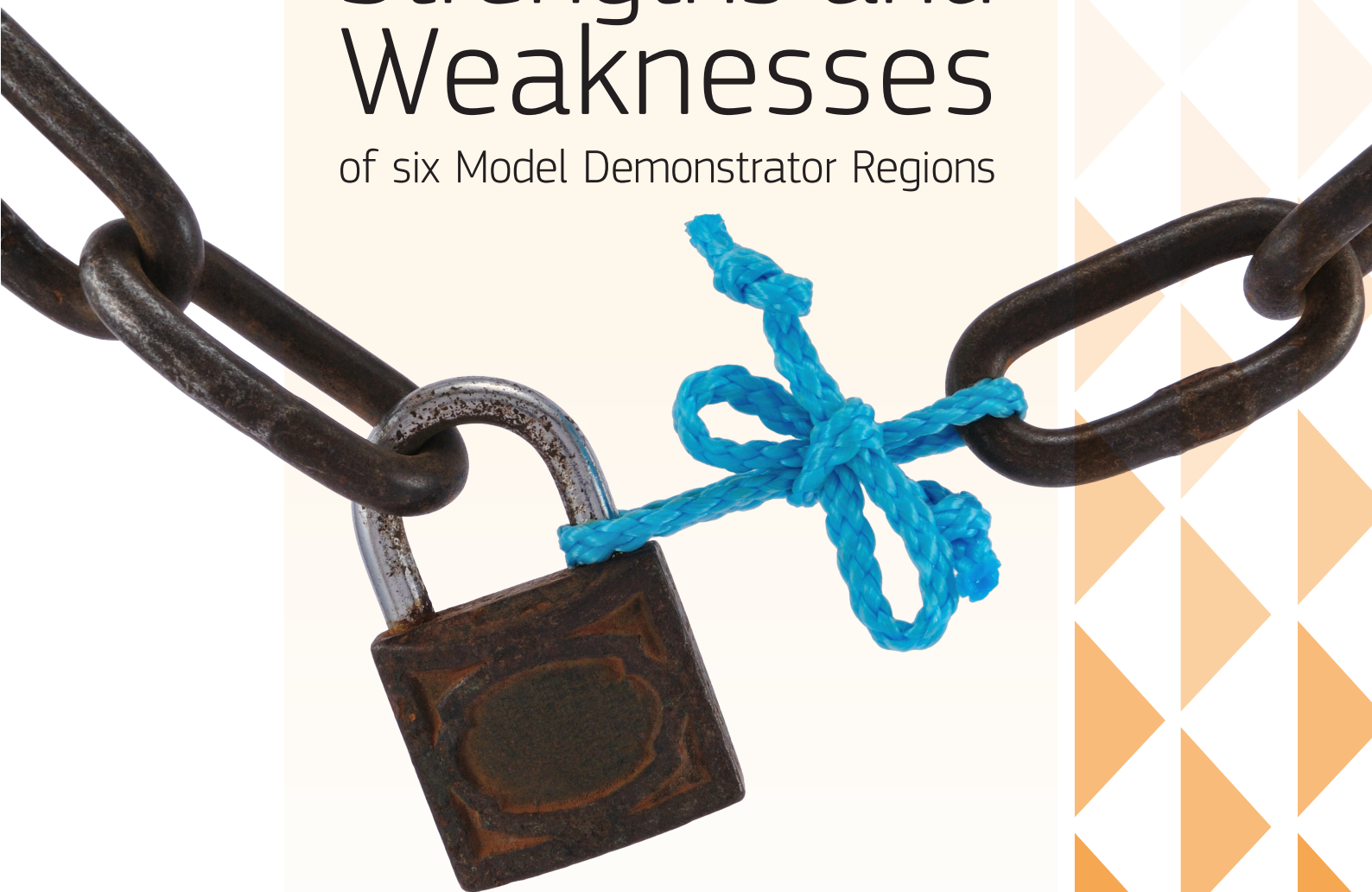
ESIS scorecards are available for a total of 271 EU27, NUTS level 2 regions. For each region, ESIS includes radar or spider graphs showing the performances across the different dimensions compared with the average performance of the EU and also data tables showing the absolute and relative performances related to each of the indicators for the region, its country and the EU. ■



Data in Action

Pointing to the Strengths and Weaknesses

of six Model Demonstrator Regions



THIS ARTICLE PRESENTS the main findings from the European Service Innovation Scoreboard that underpin the challenges and features of six model demonstrator regions. The performances of the regions are highlighted in terms of how they relate to the average performance in the EU27, particularly when these performances really stand out from the EU average. The ESIS data can be viewed using the ESIS Online tool (see next section).



Canary Islands



The Canary Islands – Increasing employment in knowledge intensive services

The insular character of the Canary Islands fragments the territory and its markets and this, in turn, produces extra costs for infrastructure and services. The business fabric mostly consists of SMEs with limited entrepreneurial and innovation cultures. An important bottleneck is represented by the high unemployment rate and income, as measured by per capita GDP, which stands at € 19,500 and is below the EU27 average of € 24,500.

ESIS shows that the Canary Islands has a below average performance in wider framework conditions (48.6% compared to 54.3% for the EU27) and, particularly, in infrastructure, labour market efficiency and business sophistication. These weaker framework conditions are threatening both the extent and impact of service innovation. The performance record for service innovation is mixed. Inputs are below average and this is mainly due to the below average rates of innovative companies that are collaborating with other companies (5.3% compared to 9.9% for the EU27) and to the low percentages of researchers (0.05% compared to 0.34% for the EU27) and R&D personnel in the business enterprise sector (0.1% compared to 0.64% for the EU27). To strengthen this performance, companies should be encouraged to invest more in R&D and to take advantage of the know-how and experience of other actors by encouraging collaboration be-

tween private and public partners. The region also has a below average score in throughputs, because of its relatively bad performance in ‘networking, connecting and brokerage services.’ In service innovation outputs, performance is close to average but this is expected to improve due to increasing employment in knowledge intensive services. Performance in outcomes of service innovation is just above average and the rapidly increasing employment in knowledge intensive services is becoming the main driver of structural change in the region. Overall, the region is not performing especially well in service innovation and more efforts are needed to strengthen this type of innovation.

The broader set of structural indicators highlights that entrepreneurial activities, which are important for translating ideas and inventions into marketable innovations, are well developed with an above average share of people embracing such change. However, weaknesses can be observed in innovation and business model generation because there are very few activities in medium to high and high-tech manufacturing. ■

Emilia-Romagna



Emilia-Romagna – Focusing on innovation and business model generation

Emilia-Romagna has a strong regional economy as its levels of per capita income at € 30,077 and disposable income at € 19,257 are well above the EU27 averages of € 24,500 and € 14,499, respectively. However, there is an obvious weakness in the quality of governmental policies and practices that appears to be hindering innovation in the region.

The region's policy-makers aim to increase the competitiveness of the service sector and to turn Emilia-Romagna into a real leader of service innovation in Southern Europe and also into one of the main innovation actors at European level. Emilia-Romagna intends to reinforce the service sector and the proactive integration of services into the manufacturing sector and thus boost the region's competitiveness and its capacity to face the societal challenges of the future.

ESIS shows that in the wider framework conditions, Emilia-Romagna performs below average on institutions (with an index of 14.0 compared to 43.5 for the EU27) and higher education

(66.0 compared to 70.1 for the EU27) and above average on infrastructure (81.0 compared to 58.2 for the EU27), labour market efficiency (69.0 versus 55.0 for the EU27) and market size (70.0 compared to 50.3 for the EU27). The quality of institutions needs to be improved and more investment is required to upgrade the higher education system. Performance on the inputs into service innovation is below average (21.5 compared to 27.9 for the EU27). There are also other weaknesses in ‘innovation expenditures in KIBS’ and ‘networking, connecting and brokerage services,’ ‘co-operation in innovation’ and the share of people who have completed tertiary education. Support is needed to increase investment in innovation, as performance in throughputs is just above average (28.7 compared to 27.9 for the EU27) and this is largely the result of strong performance in the share

of companies with a service innovation and the share of organisational innovators. But ESIS also shows that more efforts are needed to increase the share of product and process innovators. Also, performance in service innovation outputs is above average (34.0 compared to 33.5 for the EU27) with the share of turnover being due to new to market innovations, which are at the highest level of all the demonstrator regions. In outcomes, Emilia-Romagna is a weak performer, as it has below average shares in changes in employment ratios in KIBS and service innovation intensive industries. In addition, the region is lagging

behind other regions in becoming more service innovation-oriented.

Emilia-Romagna is currently not providing the best possible environment for innovation, as it is performing at a below average level in four of the five dimensions of structural indicators. The only exception is in 'innovation and business model generation' within the region. In particular, its levels of high-tech patent applications and of innovators collaborating with others are very poor. However, in business R&D expenditure and employment in strong clusters, the region is performing very well. ■

Limburg



Limburg –Supporting entrepreneurial activities and business model generation

Manufacturing is one of the most important sectors in Limburg. The region's economic performance is strong, with per capita income at € 31,600 being above the EU27 average of € 24,500, and unemployment at 1.5% being below the EU27 average of 4.1%. The manufacturing industry is facing growing commod-

itisation and making good products is simply no longer enough. In order to maintain the competitiveness of its manufacturing industry, the region is committed to the development of industrial business services that can strengthen the added value of this industry in the long-term. A transformation of the regional economy is necessary and at the heart of this transformation will be added-value services based on advanced technology, smart products and cutting-edge ICT.

ESIS shows that Limburg performs well in the wider framework conditions, creating a favourable environment for companies to innovate. The performance record for service innovation is not that strong (27.4 compared to 27.9 for the EU27) due, in particular, to below average innovation expenditures in knowledge-intensive business services. Companies need to invest more in developing innovations and this, in

turn, requires more government support. Limburg scores just above average in throughputs (30.9 compared to 27.9 for the EU27) because of its relatively poor performance in 'networking, connecting and brokerage services.' Service innovation outputs performance is below average (22.9 compared to 33.5 for the EU27) and this is largely due to a below average employment share in service innovation intensive industries and also in sales from innovative goods or services. This confirms the fact that not only innovating companies, but also companies that currently do not innovate, need to become more innovative. Performance in outcomes of service innovation is around the average (56.8 compared to 57.4 for the EU27) but it is worrying to see that the employment share in service innovation intensive industries has decreased. Overall, the region is not performing well in service innovation and more efforts are needed to strengthen this type of innovation.

The broader set of structural indicators highlights that entrepreneurial activities and innovation and business model generation are well developed. However, weaknesses can be observed in knowledge development due, in particular, to a low share of researchers and collaboration and networking activities. This all indicates a lack of innovation activities with companies operating in relative isolation without seeking the benefits of learning from others by collaborating more intensely. ■



Luxembourg



Luxembourg – Offering strong framework conditions and innovation collaboration

The Grand Duchy of Luxembourg is one of the smallest, as well as one of the most prosperous, regions in Europe. Regional per capita GDP is € 78,600 and is more than three times higher than the EU27 average of € 24,500. The Luxembourgish economy has benefited from a strong steel industry in the past and from financial services in banking and insurance today. However, financial services are in danger of losing their competitive advantage due to the opening up of the bank secrecy laws. Therefore, Luxembourg needs to reduce its dependence on this single sector of financing and diversify the economy into knowledge-based services. Luxembourg is investing in personalised medicine in an effort to systematically change the nation's healthcare system. The focus is on the prevention and early treatment of life-style related chronic diseases that are considered to be an ever increasing burden on Luxembourg's healthcare system.

In ESIS, Luxembourg acquires above-average scores in the wider framework conditions (76.1 compared to 54.3 for the EU27), and the same applies to its scores in relation to the other demonstrator regions. This is a clear indication that the Luxembourgish economy can be seen as a very positive and supportive 'eco-system' for the development of innovation. Equally, Luxembourg displays strong above-average results on the service innovation input dimension (48.2 compared to 27.9 for the EU27) because of high scores on innovation cooperation and expenditures. In other words, companies – in particular service companies – tend to activate external sources of knowledge when it comes to innovation processes and this can be

interpreted as representing a clear propensity to innovate, as well as being a sign of potential success.

The same observation can be made for throughputs, as the share of companies that have introduced service innovation is large and there are strong figures related to the innovation propensity of KIBs and also of 'utilities and infrastructure services.' To put it differently, the actual capacity of Luxembourgish service firms to innovate is significantly higher than the EU average.

When it comes to service innovation outputs or the economic consequences and the impacts of the innovations, Luxembourg is below the EU27 average (18.5 compared to 33.5 for the EU27). The indicator 'share of turnover of newly introduced innovation new to the firm' is surprisingly low in the region. However, it should be noted that Luxembourg is a very service-oriented economy dominated by financial services and this may introduce a bias into this observation. Scores in outcomes are again higher than those of the EU as a whole (58.5 compared to 57.4 for the EU27), which is coherent with the different observations outlined above.

As for the systemic functions of Luxembourg's innovation system, the structural indicators mainly show slightly above-average results, apart from the striking exception of entrepreneurial activities that are at a much lower level than the EU27 average. All in all, Luxembourg meets the main conditions required for the existence of a favourable environment that promotes innovation within companies. ■

Northern Ireland



Northern Ireland – Providing an efficient labour market and higher education opportunities

Northern Ireland's economy remains dependent on traditional industries such as food, construction and engineering. However, in the last 10-15 years, the regional economy has made significant progress in exploiting strengths within emerging sectors including software, business services and financial services. As such, the profile of the Northern Ireland economy is increasingly based on a balance of traditional industries complemented by emerging industries.

The most significant sectors in terms of employment and number of business establishments are wholesale and retail, real estate, construction and hotels and restaurants. The most dynamic sectors during the period 2003-2009, measured by employment growth and increased number of business establishments, were traditional manufacturing sectors including: fabricated metal products; furniture; medical, preci-

sion and optical instruments; and electrical and optical equipment.

The findings from ESIS show that Northern Ireland performs above the EU27 average in terms of the wider framework conditions for service innovation (58.1

compared to 54.3 for the EU27), particularly in the areas of labour market efficiency, higher education and training. However, this is not being reflected in productivity, with the region exhibiting a weaker growth in productivity, resulting in a GDP per capita of € 21,200, which is 13% below the EU27 average of € 24,500.

This pattern of change may reflect the structure of the employment

sectors. The region has lower shares in employment, in medium-tech and high-tech manufacturing and in service innovation intensive industries. However, while the employment share in knowledge intensive services of 35.6% is marginally above the EU average of 35.3%, the data does not give a picture of the types of occupations involved and it is possible that many might represent lower value added jobs in these sectors.

The evidence of the potential for service innovation indicates that the region faces challenges. The region has a lower share of overall employment in business enterprise sectors and, specifically, a lower share of R&D-focused employment than the EU average. A significant weakness of the region can be seen in a below average performance across all dimensions of service innovation throughput. The weaker performances are more pronounced within knowledge intensive businesses, where there are greater variances from the average in process, marketing and organisational innovation.

Despite a weaker performance in the inputs and throughputs for service innovation, the outcomes appear to paint a more positive picture (57.9 compared to 57.4 for the EU27). Employment growth in knowledge intensive business services is very strong, while growth in the shares of knowledge and innovation intensive services are near to average, although this could be a reflection of the much stronger performance in the knowledge intensive business services.

In terms of structural performance, the region is close to the EU average although during the wider consultation with regional stakeholders on service innovation, issues in terms of collaboration and networking were acknowledged. There is no regional consensus on the nature of collaboration and networking schemes, as stakeholders' views include such schemes being focused mainly on technology development, targeting internationalisation schemes for service industry firms and supporting services development in the region. ■

Upper Austria



Upper Austria – Investing strongly in innovation and business expenditures

Upper Austria is the leading industrial and export-oriented region within Austria and hosts a large number of innovative technology-oriented companies. It has a GDP per capita of € 33,800 compared to € 24,500 for the EU27 and a disposable

income of € 18,469 that is higher than the EU27's average of € 14,499. Upper Austria's unemployment rate is also low. Compared to the EU27, the region has a high rate of employment in technology-oriented manufacturing, as well as high research and development expenditures and a large percentage of researchers in regional firms. Innovation collaboration is strong and a considerable number of companies have introduced service innovation. However, labour productivity growth, the share of people working in knowledge-intensive services and also employment in industries with a greater potential for service innovation are below the European averages. The overall expenditures on research and development in the region are higher than the EU average, but below the 3% goal formulated for the Lisbon process. All in all, Upper Austria's economic performance is very good. The results highlight two important aspects that regional policy addresses in its new 'Upper Austria 2020' strategy – technology-based organisational innovation and the integration of services into product development to enhance economic productivity.

ESIS shows that Upper Austria has favourable framework conditions for service innovation and the transformation of its regional economy, as all individual indicators outperform the EU27 average (68.8 compared to 54.3 for the EU27). Areas in which performances are outstanding include: regional institutions; labour market and economic stability; innovation expenditures of regional knowledge-

intensive business services; innovation cooperation; business expenditures on research and development; and the share of researchers and R&D personnel in regional companies. However, innovation investments in 'networking, connecting and brokerage services' and 'utilities and infrastructure services,' which were identified as services with transformative potential by the Expert Panel on Service Innovation in the EU³, are below the EU27 averages.

Turning to service innovation throughput, the ESIS indicators show that Upper Austria scores slightly higher than the EU average (29.8 compared to 27.9 for the EU27), which is mainly related to the positive results of regional knowledge-intensive business services and their product, process and organisational innovations. Consistent with the input dimension, innovation in 'networking, connecting and brokerage services' is below the European average, whilst the 'utilities and infrastructure services' demonstrate above average scores in product, process and marketing innovation and a below-average share of innovators in organisational innovation.

Finally, in terms of the results of the service innovation in Upper Austria, which are the output and the impact on structural change or the outcomes, ESIS demonstrates below-average results on the output side (28.8 compared to 33.5 for the EU27), but a more positive score in the outcome dimension (56.1 compared to 57.4 for the EU27). The figures suggest that Upper Austrian companies generate fewer turnovers with newly introduced innovations in their companies than the EU average and that the region has less employment in industries which are considered as being service innovation intensive. Available data for indicators referring to service innovation-related structural change in the region show slightly below average results compared to the EU27 level. ■

3 http://ec.europa.eu/enterprise/newsroom/cf/itemdetail.cfm?item_id=6684&lang=en



MAIN FINDINGS FROM THE EUROPEAN SERVICE INNOVATION SCOREBOARD

Table 1: Demonstrator regions: ESIS indicators measuring services innovation

	Upper Austria	Canary Islands	Emilia-Romagna	Luxembourg	Limburg	Northern Ireland	EU27
	AT31	ES7	ITH5	LU	NL42	UKN	EU27
Wider framework conditions (index)	68.8	48.6	55.9	76.1	73.9	58.1	54.3
Institutions (0-100)	70.0	32.0	14.0	86.0	86.0	61.0	43.5
Macroeconomic stability (0-100)	79.0	65.0	57.0	77.0	92.0	43.0	58.2
Infrastructure (0-100)	83.0	43.0	81.0	86.0	92.0	72.0	74.6
Higher Education/Training and Lifelong Learning (0-100)	79.0	58.0	66.0	75.0	80.0	77.0	70.1
Labour market efficiency (0-100)	79.0	27.0	69.0	65.0	81.0	70.0	55.0
Market size (0-100)	56.0	41.0	70.0	72.0	68.0	50.0	50.3
Business sophistication (0-100)	51.0	21.0	58.0	86.0	61.0	48.0	43.2
It is important to try new and different things in life (0-100)	n/a	61.3	n/a	n/a	41.3	48.4	41.7
It is important to think new ideas and be creative (0-100)	n/a	75.8	n/a	n/a	54.0	51.6	53.6
Service innovation – input (index)	41.5	15.2	21.5	48.2	27.4	25.7	27.9
Innovation expenditures (%age) in Knowledge intensive business services	7.30	2.93	3.34	n/a	3.42	n/a	4.43
Innovation expenditures (%age) in Networking, connecting and brokerage services	0.21	1.85	0.79	0.71	0.62	n/a	1.46
Innovation expenditures (%age) in Utilities and infrastructure services	0.22	0.86	0.62	n/a	0.84	n/a	0.56
Share of innovators cooperating with others	23.2	5.3	4.5	16.1	15.5	4.4	9.9
Employees with ISCED 5-6 (%age)	17.2	29.3	18.8	41.0	27.1	32.5	30.4
Business expenditure on R&D (%age total R&D expenditure)	88.9	19.9	63.7	68.5	58.7	63.0	61.7
Researchers in business enterprise sector (%age active population)	0.62	0.05	0.29	0.77	0.24	0.22	0.34
Total R&D personnel in Business enterprise sector (%age active population)	1.43	0.10	1.04	1.81	0.61	0.38	0.64
Service innovation – throughput (index)	29.8	19.0	28.7	55.7	30.9	14.7	27.9
Share of companies that introduced a service innovation	14.2	5.0	12.8	29.5	15.8	n/a	8.1
Product or process innovators (%age) in Knowledge intensive business services	58.7	48.4	50.2	70.3	58.9	33.3	52.5
Product or process innovators (%age) in Networking, connecting and brokerage services	21.9	17.9	21.4	32.5	27.9	18.4	26.2
Product or process innovators (%age) in Utilities and infrastructure services	42.3	39.2	35.0	59.7	47.0	30.3	40.8
Marketing innovators (%age) in Knowledge intensive business services	29.3	18.3	30.6	63.3	29.3	22.7	32.7
Marketing innovators (%) in Networking, connecting and brokerage services	17.3	8.0	14.5	25.9	11.9	10.6	19.2
Marketing innovators (%age) in Utilities and infrastructure services	34.4	24.0	32.0	45.7	33.8	19.4	31.8
Organisational innovators (%age) in Knowledge intensive business services	48.5	41.8	54.0	71.5	40.8	33.3	45.1
Organisational innovators (%age) in Networking, connecting and brokerage services	20.9	18.2	24.2	27.4	21.4	20.6	25.7
Organisational innovators (%age) in Utilities and infrastructure services	36.6	40.2	47.7	66.9	42.2	31.3	40.3
Service innovation – output (index)	28.8	32.5	34.0	18.5	22.9	10.5	33.5
Employment in service innovation intensive industries (%age)	3.79	2.40	3.94	4.06	3.73	4.30	4.85
Share of turnover of newly introduced innovations new to the market	5.21	6.66	6.89	6.29	5.25	1.35	4.67
Share of turnover of newly introduced innovations new to the firm	7.04	7.92	7.40	1.98	4.80	3.33	8.71
Outcomes (index)	35.3	27.1	23.1	50.6	24.9	34.9	25.6
Change in employment share in Knowledge intensive business services (%age)	n/a	0.1	0.5	n/a	0.9	4.5	0.5
Change in employment share in Networking, connecting and brokerage services (%age)	n/a	2.9	0.3	n/a	0.2	0.5	0.2
Change in employment share in Utilities and infrastructure services (%age)	0.3	0.1	0.3	n/a	0.1	n/a	0.5
Change in employment share in knowledge-intensive services (%age)	4.4	5.8	3.2	10.4	5.2	4.2	4.5
Change in employment share in service innovation intensive industries (%age)	0.5	0.5	0.0	-1.5	-0.4	0.5	0.6
Labour productivity growth (%age)	1.6	2.3	1.0	3.0	2.4	0.9	2.2

MAIN FINDINGS FROM THE EUROPEAN SERVICE INNOVATION SCOREBOARD

Table 2: Demonstrator regions: ESIS structural indicators

	Upper Austria	Canary Islands	Emilia-Romagna	Luxembourg	Limburg	Northern Ireland	EU27
	AT31	ES7	ITH5	LU	NL42	UKN	EU27
Entrepreneurial activities (index)	10.6	52.8	24.1	10.6	36.7	38.0	37.8
Share of self-employed people	11.1	13.3	22.9	8.1	12.9	15.1	15.1
Share of people who think it is important to try new and different things	n/a	0.6	n/a	n/a	0.4	0.5	0.4
Share of people who think it is important to being creative	n/a	0.8	n/a	n/a	0.5	0.5	0.5
Labour productivity growth	1.58	2.35	1.01	2.96	2.37	0.90	2.20
Knowledge development and transfer (index)	14.5	14.0	9.7	32.0	16.6	19.8	20.1
Share of employees with a higher education degree	17.2	29.3	18.8	41.0	27.1	32.5	30.4
Share of researchers among employees (business sector)	0.62	0.05	0.29	0.77	0.24	0.22	0.34
European Patent Office high-tech patent applications	5.1	15.9	4.4	9.0	18.7	20.6	17.7
Innovation and business model generation (index)	31.4	12.4	32.7	44.9	34.1	26.1	27.4
Companies with service innovations	14.2	5.0	12.8	29.5	15.8	n/a	8.1
Employment share in medium-high-tech and high-tech manufacturing	8.8	0.9	10.6	0.7	5.7	4.4	6.4
Employment share in knowledge-intensive services	28.0	28.6	28.8	46.3	38.8	35.6	35.3
Employment share in service innovation intensive industries	3.79	2.40	3.94	4.06	3.73	4.30	4.85
Financing innovation and growth (index)	48.3	30.4	42.0	32.0	46.1	38.4	43.0
Gross Fixed Capital Formation	19.2	34.7	19.3	12.4	14.5	22.2	20.7
Total expenditure on R&D	2.17	0.51	1.47	1.19	1.50	1.45	1.68
Business expenditure on R&D	88.9	19.9	63.7	68.5	58.7	63.0	61.7
Share of innovating firms that received public financial support	n/a	5.8	10.2	6.9	15.3	n/a	10.0
Collaboration and networking (index)	49.3	34.9	34.0	41.2	35.2	14.2	36.5
Share of innovators collaborating with others	23.2	5.3	4.5	16.1	15.5	4.4	9.9
Specialisation in service-oriented clusters	0.7	0.9	0.8	0.9	1.0	1.0	1.0
Employment share in 2 and 3 star clusters	26.4	50.5	53.0	23.1	8.0	0.6	31.4

Table 3: Demonstrator regions: ESIS indicators measuring economic performance

	Upper Austria	Canary Islands	Emilia-Romagna	Luxembourg	Limburg	Northern Ireland	EU27
	AT31	ES7	ITH5	LU	NL42	UKN	EU27
GDP per capita	33800	19500	30077	78600	31600	21200	24500
Disposable income	18469	12137	19257	22906	14333	14857	14499
Long-term unemployment (%age total employment)	0.7	13.4	4.6	1.4	1.5	3.2	4.1
Urbanisation (%)	26.3	52.2	35.2	37.9	64.5	39.4	51.0
Quality of Government	82.6	68.1	53.2	86.1	85.7	82.1	64.0



Accessing Regional Data and Scorecards on Service Innovation:

How to use the ESIS Online Tool to explore a Region's Performances

THE EUROPEAN SERVICE INNOVATION SCOREBOARD (ESIS) section on the European Service Innovation Centre's web pages presents data on 59 indicators that together capture a diverse range of activities related to service innovation in over 270 regions. This section explains how to access the data, analyse the performance of any of these regions and then compare it to the EU27 average performance or to the performance of any other region in Europe. This article helps you to use the online tool in the best possible way, so that you can explore the diversity of these statistics!

Step 1

Go to the ESIS homepage

The European Service Innovation Scoreboard can be accessed at (the demo will be found at <http://thefactori.com/clients/esicchart/>)

The online tool is based on a map displaying the countries or regions that can be selected for further study. The areas chosen can be examined by one, or all, of the 59 indicators – it's your choice.

The European Service Innovation Scoreboard (ESIS), presented by the European Service Innovation Centre, contains three different scorecards each fulfilling a different objective:

1. The ESIS scorecard for service innovation and transformative power measures the importance of service innovation in a region
2. The ESIS scorecard for systemic functions & structural indicators can be used as a tool in regional policy making
3. The ESIS scorecard for general socio-economic situation provides a summary of the economic performance of a region reflecting the overall results of its policies, innovation and business activities in a region.

Step 2

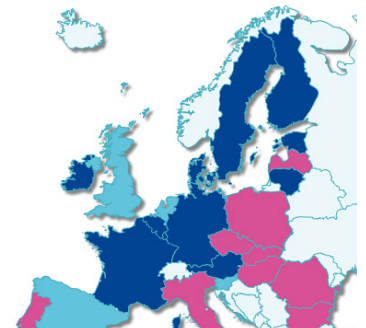
Choose a country or a region in Europe that you would like to study in detail

ESIS demonstrates the impact of the 'transformative power' of service innovation with indicators which present a statistical profile of each region, showing its performance related to each of the indicators. The profiles demonstrate the relative strengths and weaknesses of the region and highlight potential areas for new policies aimed at improving the impact of service innovation. In order to proceed, please choose a country in the 'Select country' drop-down list or click directly on the country in the map of Europe. The map of the country appears, from which a region that interests you can be chosen by clicking on it directly. The regional data will then be displayed with the help of three spider charts and three tables – representing the three different scorecards of ESIS.

If you are interested in obtaining more information on particular indicators, you can choose one of the 59 indicators in the drop-down 'Filter by indicator' list.

Select country:

Filter by indicator:



Please use the map or the filter drop-down tool to check the area in which you are interested. In addition, you can choose an indicator on which you want to focus in more detail.

Step 3

Study the results at national or regional level and/or compare two regions or countries

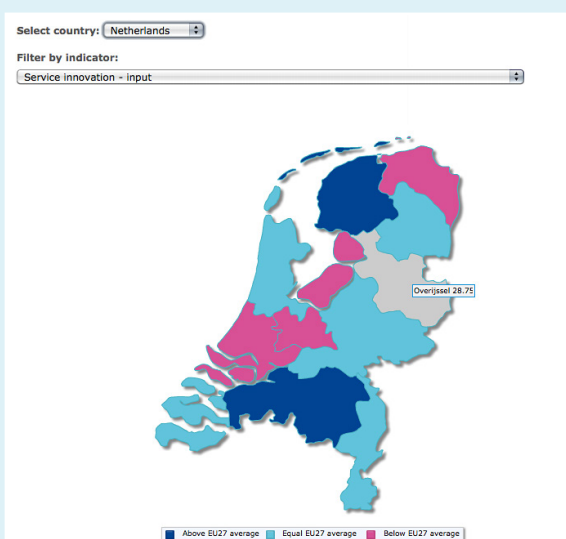
If you are interested in knowing how European countries perform in relation to each of the indicators, just choose one indicator with the filter tool and check the European situation on the bar chart located below the map. The bars present countries in descending order from the best to the worst performer and the colour code shows you how these Member States perform in relation to the EU average. The colour indications are as follows:

- = Above the EU27 average;
- = Equal or close to the EU27 average;
- = Below the EU27 average.

When looking for more regional information, select a specific country. Then the bar chart that appears will show all the regions in that Member State and grade the regions in rank order.

The first set of indicators (**ESIS scorecard for ‘Service innovation and transformative power’**) measures the importance of service innovation in a region. The indicators are presented in a way similar to the Innovation Union Scoreboard with indicators grouped into five dimensions which together measure framework conditions, service innovation and the outcomes of service innovation.

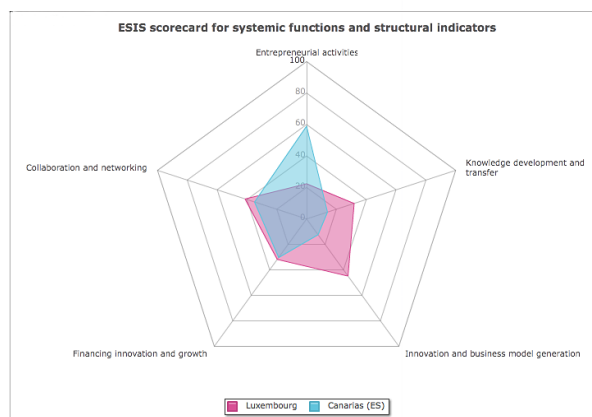
The second set comprises structural indicators (**ESIS scorecard for ‘Systemic functions and structural indicators’**) that can be used as a tool for regional policy-making.



ESIS scorecard for systemic functions and structural indicators

The second set comprises structural indicators, and the scorecard can be used as a tool in regional policy making. The scorecard takes a broader approach and focuses on systemic dimensions relevant to measuring entrepreneurial, high-tech and business activities in a region.

The scorecard data is presented in a spider chart, a data table and a bar chart. The following charts show the performance across the different dimensions compared to the average performance of EU27 or compared to the specific country/region chosen.



With the filter you can compare a specific region/country with another country or region. In order to make the comparison, you can use all three of the drop-down tools.

This set of indicators takes a broader approach and focuses on more general dimensions relevant to measuring entrepreneurial, high-tech and business activities in a region.

The third set of indicators (**ESIS scorecard for ‘The general socio-economic situation’**) provides a summary of the economic performance of a region capturing the overall results of its policies, innovation and business activities.

The interpretation related to each of the indicators is that higher scores indicate better performances. The scales used are found together with the names of the indicators in brackets. The spider charts and tables in ESIS visualise the regional performance compared to the EU27 regions or the country/region chosen which, in turn, helps to interpret the current performance.

Once you have learned to use the basic functions of the ESIS online tool, you can explore its full potential. By initially choosing the indicator and then the two countries/regions, you can take a closer look at the innovation ecosystems in each of the selected areas, including:

- Where do strengths exist and how do they differ from each other?
- What are the kinds of requirements and conditions for service innovation? and
- What could be the most essential topics for a renewed policy focus?



WHAT'S NEW

CONTACT

ESIC SERVICES

The European Service Innovation Centre (ESIC) initiative is run by a Consortium led by Ramboll Management Consulting. Other partners in the Consortium are the Maastricht Economic Research Institute on Innovation and Technology (MERIT), Strasbourg Conseil, the Technopolis Group Belgium and Valdari Vicari Associati (VVA).

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UPCOMING EVENTS

ESIC conference

9-10 September 2014, Helsinki, Finland

The European Service Innovation Centre (ESIC) conference in Helsinki, Finland on September 9-10, 2014 is a platform for everyone engaged or interested in service innovations. The conference gathers national and regional policy makers, practitioners, experts, academics and company representatives. It will present and discuss the key findings of the ESIC and highlighting the work done and lessons learned in the field of service innovation and regional policy.

http://ec.europa.eu/enterprise/initiatives/esic/esic-conference/index_en.htm

24th Annual RESER Conference

11-13 September 2014, Helsinki, Finland

The European Association for Research on Services, RESER, will hold its 24th International Conference in Helsinki, Finland. RESER conference is a multidisciplinary forum, where researchers in economics, geography, sociology, management, marketing and many other disciplines meet to share the latest advances in research on services.

www.reser2014.fi



INTERESTED IN WORKING WITH THE ESIC?

Regions which would like to receive advisory support from the European Service Innovation Centre are welcome to send an initial expression of interest to ESIC@ecescic.com

PLEASE FIND FURTHER INFORMATION, OR FOLLOW ESIC, AT

ec.europa.eu/enterprise/initiatives/esic

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