# International Seminar INSEED
# „Intellectual Property Rights and Service Innovation (IPRSI)"
# Bucharest, February 21-23 and 25-26 2013

## Scope of IPRSI

The IPRSI INSEED Seminar is devoted to important themes related to innovation in services: IPR in the context of service innovation, R&D and knowledge base for service innovation, and the role of Academia in creating skills, knowledge and contributing to research activities in Service Science.

## Scientific IPRSI Topics

- Current trends and patterns in Service Innovation
- R&D and Services
- Innovation in Services
- The role of Science, Technology, Engineering and Mathematics in Service Innovation
- Measuring Innovation in Services
- Intellectual Property Rights and Service Innovation
- Entrepreneurship for Innovation in Services
- Education, Learning and Skills for an Innovative Service Economy

## General Information

### *R&D and Innovation Policy for Services*

Services are still neglected as arenas for government innovation policy. Not only do new innovation schemes need to be devised to make them applicable to service industries ("*widening*"), but also existing innovation policies accessible and applicable to innovation in services and service functions (i.e., the "*deepening*" of existing innovation policies). Overall there is evidence that amongst those that are innovation active, service firms are less likely to receive support than are their manufacturing counterparts. Care also needs to be taken as R&D and innovation policies cannot only be measured in terms of financial

spending as some of the more powerful instruments do not necessarily involve financial support, for example competition policies, regulation or educational policies.

This highlights activities associated with process and organisational innovation. Most R&D programs, however, are not linked to particular sectors (i.e. they are horizontal), although most of them deal with thematic priorities and these are quite often more prevalent in one or more of a limited set of (mainly manufacturing) sectors. There is, therefore, a lack of truly horizontality when nominally horizontal programmes de facto exclude service innovation activities, either partially or totally.

***Links with the Research and Science Base***

Another issue of concern is service sector linkage with the science and research base, as well as regional tradition. Thus, although services have been growing in their R&D intensity, service firms are still poorly linked with the science and knowledge base of their national and regional territories. Thus, service firms not only in general have fewer collaborative with external partners, but, moreover, universities and research institutes were the least widely engaged partner types.

The four least important sources of innovation (according to statistics) were: consultants, universities, research institutes and patents. None of these sources was identified as “very important” by more than 10% of the innovating firms, although individually financial services attached greater importance to consultants. This suggests these sources are rarely important for innovation in services, but it may be that they are used more frequently by service firms engaged in higher levels of innovative activity. Amongst service firms, technical business service firms tend to be more likely to use these sources than all services, and indeed manufacturers.

How can service firms be supported in developing their engagement and use of the science and knowledge base of their national and EU? This can be achieved in two ways:

a) by enabling the science and knowledge base to become more responsive to the innovation needs of service firms; and,

b) by making service firms more aware and incentivised to use the science and knowledge base of their national territories.

In relation to the former element, a), the science and knowledge base (such as Higher Education Institutions (HEIs), public research establishments (PREs) and research technology organisations (RTOs)) needs to be made more sensitive to the knowledge needs of service firms and organizations.

Apart from investing in the services skill base more broadly, this requires a science base that is more responsive to the needs of services activities and the building up of “state of the art” knowledge on services R&D and innovation. Firms with requests dealing with technological innovation will find many organisations, research institutes and innovation intermediaries willing to help them; whereas service firms find it much more difficult to find support from within the science base for resolving issues that most often face. To a large

extent, this is the result of institutional inertia, but is also due to service firms not articulating their knowledge needs adequately.

***Measuring Innovation in Services***

The lack of adequate data, indicators and methods to analyse services and service innovation, has been the constant refrain of researchers studying services over the years. . Although there have been some advances in the study of ISSI, there remain a number of challenges and shortcomings in the analysis of innovation in services. Firstly, there is a problem in analysing and studying services and their innovative potential because services are simply too big a “sector” to study in any meaningful or coherent form. The sheer size and significance of the sector within the economy has, therefore, created its own problems in terms of analysis and policy formulation. In addition, they also interact amongst themselves and with other sectors of the economy (e.g. manufacturing) in complex ways.

Thus, there is a significant challenge in reporting the diversity of activities covered by the services sector, and to provide an informed commentary on the innovation trends across these diverse activities. There is also the inherent difficulty of studying intangible, disembodied changes over time, which covers a key dimension in many service innovations. Whereas indicators and metrics of tangible products and equipment and their innovation may be difficult to survey, it is even harder when intangible changes are sought to be measured.

***The role of STEM in service innovation***

While there is growing recognition of the importance of innovation in services, there remains poor understanding of the role of Science, Technology, Engineering and Mathematics (STEM) in service innovation.

This is because there isn't obvious recognition of the fact that STEM tools and techniques are useful for the service sector, particularly for industries where *people* deliver value to the customer. There is a need to recognise service as a deliberate and organised system. It is also important to understand that service innovation is about empowering people in the system to think creatively and put ideas to work in a systematic, scientific manner. In other words, we need more science in service for service innovation.

The term “service science” could be used as a catalyst to change mindsets. “Service science” can be seen as the vehicle for the use of STEM tools in service, and for getting organisations signed up to the idea that there is a science to service. This has been found to be particularly effective in bringing organisations to the table to talk about service innovation, research and development.

***Intellectual Property Rights and Service Innovation***

There is on-going debate about creating an effective intellectual property right (IPR) framework that stimulates and sustains innovation and this relates to services as well.

Generally, service firms use IPRs much less to protect their innovations than manufacturing firms. Patent levels are much lower in services than in manufacturing, although other forms of IPR, such as copyright and trademarks, are seen as more significant[55]. Similarly, service firms do not typically consider lack of property protection as a major barrier to innovation.

However, the issue is not transparent and deserves carefully monitoring for two main reasons:

- For certain service sectors, such as TELCO or computer services, IPR issues are important because businesses in these sectors often feel that existing property right mechanisms are not properly aligned to the needs of the firms concerned. There have been some shifts in the reach and nature of mechanisms, such as the extension of patents to cover certain forms of software generation, but problems remain for firms operating in knowledge intensive, high technology service sectors.
- As all forms of services become more knowledge and innovation intensive, increasing numbers of service firms are encountering problems associated with intellectual property rights and the protection of knowledge surrounding various aspects of the innovation process. As yet, these IPR barriers may be of a low level, but given the general trends towards increasing levels of innovation it is likely to become an ever more pervasive issue over time.

On this basis, there is a need for on-going monitoring of IPR barriers to service innovation and exchanges of experience. Policy instruments should be implemented in two areas:

1. Firstly, there should be steps to systematically increase the awareness of the various options that IPR can provide for innovative service companies. This also includes mechanisms, such as database protection or digital rights management. The awareness campaign should not only focus on a more active use of the existing IPR, but also on strategies and practical options how to deal with the rights of other companies.
2. Secondly, there are particular IPR needs and problems for Small and Medium-sized Enterprises (SMEs) in the service sector. The rationale behind supporting IPR scheme for SMEs is based on three pillars. First, in general, there is a low usage of the IPR mechanisms (with the exception of trademarks) amongst service companies compared with manufacturing companies. Second, SMEs face structural disadvantages in the use of IPRs due to their significant fixed costs associated with setting them up. Thirdly, IPR portfolios can represent important assets for (innovative) start-up service companies trying to raise finance from banks or venture capitalists.

On the basis of this evidence, some the IPRSI presentations will discuss the perspective of supporting IPR for Service Innovation:

- Developing policy instruments which would systematically increase the awareness of the various options that IPR can provide for innovative service companies, especially SMEs.
- Support service companies in the handling of their own intellectual property and that owned and used by other companies.

***Academia: Education, Learning and Skills for an Innovative Service Economy***

Working with the service sector requires researchers to have a strong interdisciplinary inclination and to be relevant to practice; solutions for STEM-based tools in service organisations are much more challenging academically, because they are not easily found and require bespoke intellectual input.

Universities should recognise that siloed, mono-disciplined mentalities therefore inhibit engagement with the service sector. To be truly interdisciplinary so as to encourage innovative research, service needs to be free of its disciplinary boundaries, and the paradigmatic research influences of each discipline. In short, service needs to evolve into a discipline in its own right. To engage with the service sector fully, service research should be liberated from school and departmental territories and sit autonomously within the university, free to bring in top academics of other disciplines to advance the cause of service innovation.

The issue of education, learning and skills is important for two reasons in relation to service innovation: firstly, innovation and the introduction of new technologies commonly involves concomitant investments in training and skill development by firms; secondly, lack of suitably qualified personnel can be a significant constraint to service firm and growth. Shortages of suitably qualified labour was rated as a significant barrier to service innovation, being rated the fourth most significant barrier from international survey data.

Two broad areas of skills need greater policy attention in relation to innovation in services:

- *Management skills*: very few people receive any formal training in innovation management from universities, and especially relative to those receiving training in the more established disciplines, such as marketing or accountancy or finance. Yet it is often argued that innovation management requires a broader mix of skills than is provided by traditional, disciplinary based approaches.
- *Workforce skills*: the tradition within the education and training systems has been to encourage high degrees of specialisation. Such specialisation is appropriate for economies based on highly decomposable tasks, but less appropriate where people need to interact and interrelate in the course of their work. Such interaction and inter-relations are much more common in services work, including innovation related service work, and here worker skills are increasingly found wanting.

There is, therefore, a need to adapt educational and training systems and develop degree curricula and training initiatives which prepare individuals for the demands of the service economy. Typical aspects that are not always taught in regular education are project work capabilities, communication skills and skills to interact with clients:

1. *Identify new educational needs:* encourage experimentation in developing roadmaps for identifying multidisciplinary knowledge and skill needs for the service economy and adapt curricula.
2. *Training:* develop a range of schemes, including:

- Identification of “best practice” courses that are adapted to the knowledge and skill needs of service activities.
- Investment in dual “workplace” learning programmes where young adults combine learning from traditional educational establishments with workplace-based training in service firms and organisations.
- Encouraging the creation of courses and professional exchanges based on services R&D and services innovation management. This would include support for services’ firms upgrading their innovation management, in particular underpinning the ongoing formalisation of services innovation processes.
- Supporting the emergence of multi-disciplinary “service engineering” or “service science” training and learning initiatives which aim to provide methods and tools that can be used systematically in the development and prototyping of new service offerings and development of new business models in services.

3. *Explore the extension of tax credits:* tax credits are now available to support investments in R&D in many European Union member states; the same arguments can be applied to having *tax credits for training*, particularly where this training is associated with innovation, and consideration might be given to the introduction of such schemes.

Service industry, Academia, trade and professional associations would need to play a key facilitating role in developing these set of policy mechanisms