

SCIENTIFIC AND TECHNICAL
RESEARCH COMMITTEE

– CREST –
Secretariat

CREST 1205/08

NOTE

from :	CREST
Subject :	CREST conclusions on R&D in Services – review and case studies: Promoting the Role of Systematic R&D in Services

During its meeting on 18 April 2008, CREST adopted the attached conclusions on : "R&D in services - Review and case studies - Promoting the Role of Systematic R&D in Services.

CREST CONCLUSIONS

of 18 April 2008

**R&D in Services – review and case studies:
Promoting the Role of Systematic R&D in Services**
revised version 18th April, 2008

Based on the report of the OMC Working Group

“R&D in Services”

Brussels, April 2008

The third cycle CREST OMC 3% Working Group on "*R&D in services*" reports on its fact-finding mission and its assessment on research activities in the service sector. The working group provides suggestions and recommendations on how to develop the service sector with research -related policy measures. The report highlights the importance of the service sector and service activities in the European economy and the essential role R&D can play for the improvement of the European economic performance and its innovative capacity. At the moment the area is attracting increasing policy attention on global scale, as countries are striving to boost their economic development through innovation and growth in services¹. There is a need to take action at European scale that will move forward research on services and produce knowledge for policy development. As a result, Member States and Associated States will be more able to mobilise the full innovation potential of both services and its technologies.

The CREST working group on "R&D in Services" has produced evidence by a report that support the following conclusions and CREST decides to:

1. To encourage Finland to make a proposal for the continuation of the WG's work, e.g. a proposal for an OMC NET, in order to develop a mutual learning activity between Member States as well as Associated Countries on experiences of research and policy development in services. Active Member States and Associated Countries will present their activities and experiences to other interested countries. In addition new developments outside Europe may be assessed.
2. To encourage CREST Members to explore joint research activities involving Member States and/or Associated Countries in ERANet type initiatives in order to stimulate research and innovation in services highlighting the connection with technological oriented R&D in services industries, service sciences and service engineering.
3. To invite Member States and Associated Countries to encourage their universities and public research institutes to explore the possibilities to promote the subject of service sciences and service engineering.
4. To initiate a regular exchange of views on research and innovation in services bringing together different stakeholders by means of private-public partnerships.
5. To invite the Commission to explore in the context of the mid-term review of the financial perspective an expansion of research activity on services in the context of FP7 as well as a more a comprehensive approach on service research in the forthcoming FP8 on subjects proposed in the report delivered by the Working Group.

¹ One of the remaining three candidates for President in the US calls for a service research programme. Taiwan has adopted an essential service research programme and even China is considering one. The WG was invited by Germany to participate in a "Transatlantic workshop Germany-USA: Service Research – Status quo, advance and development, held 2 April 2008 by a video conference in Berlin.

Summary of conclusions of the CREST Working Group "R&D in Services"

Background

Policy makers have increasingly recognised the socio-economic importance of services. As a result, there is a growing interest to develop measures that address services within the EU but also in most other developed countries such as the USA, Japan, and Taiwan. A number of major EU level initiatives have already been launched in this area. These include such topics as innovation in services, service markets, and the support for service business development. In addition, at the Member State level there are several programmes aimed in the above areas, as well as the renewal of public sector services.

So far, there are only few policy measures specifically targeting R&D in services. Still, it is clear that this policy domain has wide spread needs for further research and development. These needs range from basic research to design and delivery of the policy. Policy development in the area of R&D in services is still at a very early stage of the development and there are many developments needs starting from the definition of key concepts such as R&D in the service context. Hence, there is a strong indication that the R&D in services is an area that deserves specific attention at the Member State and the Community levels. The following policy implications will address the issues that appear to be most relevant from the R&D in services perspective.

Major Policy Objectives and Strategies towards more effective R&D in services

Most member states have recognised the socio-economic importance of services and a need for more effective R&D in services.

a. Take action to increase knowledge base to enable service innovation by R&D in services

CREST WG highlights that there is a need for policy actions that enable better understanding of the nature of innovation in services by R&D. More accurate statistics and improved conceptual clarity are important enablers of further development in the area:

- *There is a request for research in services within the FP7 Social Sciences and Humanities. This request to expand research on services should evolve into a full programme under the FP8.*
- *Joint research initiatives by the Member States and Associated Countries are needed for R&D in services.*

The work carried out by the Crest Working Group indicates that R&D in services often remains an informal and embedded activity that escapes statistics, as well as systematic management attention. Both of these issues can benefit from the increased attention to multidisciplinary service science. Here, FP 7 as a European activity can take a leading role in galvanizing action, and in pushing forward the frontiers of knowledge on innovation in the service sector and in the services science area.

The current statistical system does not provide very accurate picture on the R&D in services because informal activities are often not recognised, nor recorded as R&D in services. In addition, much of technology and product related R&D in services is recorded as manufacturing R&D. From policy perspective all this means that it is difficult to identify, understand and target R&D in services. Still, R&D in services is increasingly important element of competitiveness. Globalisation, and opening up of national markets (as a result of services directive) have created a situation where even traditional, and locally traded services are under increasing pressure to carry out systematic and effective R&D. More accurate statistics and conceptual knowledge on innovation established by research in services provide valuable information for the effective implementation of broad based innovation strategy. Better statistics can enable targeted policy actions on those services industries where R&D is under performing.

In order to allow innovation research has to be expanded. R&D in services is a multidimensional, multilayer phenomenon that needs further exploration. The notions of ‘service sciences’ and ‘service engineering’ may provide ways to develop deeper understanding of innovation and of R&D in services². An effective dissemination of this knowledge to a wider audience including policy makers, academic community and business practitioners would be desirable:

- *There is a request to launch FP7 projects that can further explore the R&D in services area, which still has a lot of scope for exploratory research.*
- *An expert group that can further explore the potential to move forward in the areas of Service Science, Service Engineering and other relevant approaches in the European universities and research institutes should be set up.*

R&D policies should be based on thorough understanding of the service concept and its linkages to the wider national and international economic contexts. Service sector as such consists of highly heterogeneous group of industries.

Within the services domain universities, research institutions and businesses are carrying many different types of R&D that can be related to variety of disciplines such as social sciences, economics, mathematics, consumer research, marketing research, various technological fields, just to name some prominent areas. Finally, the R&D can happen in various stages of the service process, on strategic level, within the operational level projects, and in close connection with clients as part of the service delivery. All this creates a complex, multidimensional multilayer fabric that characterises R&D in services. Potentially, policy design and delivery will greatly benefit from the better understanding of the specificities of R&D within services.

2 The key to service science and service engineering is their interdisciplinary nature , focusing not merely on one aspect of service but rather on service as a system of interacting parts that include people, technology, and business. As such, service science draws on ideas from a number of existing disciplines – including computer science, cognitive science, economics, organizational behavior, human resources management, marketing, operations research, and others – and aims to integrate them into a coherent whole.

http://en.wikipedia.org/wiki/Service_Science,_Management_and_Engineering

b. Initiate the development of knowledge base and structures benefiting R&D in service

The CREST WG gives emphasis to the fact that research based knowledge on innovation in services could be increased through a number of policy measures such as:

- *Establishing university chairs in the domain area R&D in services*
- *Providing support for multi-disciplinary curricula development, for example in the areas of service science, service engineering, services management studies leading into MSc and BSc degrees.*
- *Establishing a European R&D in services doctoral programme operated by university consortia³.*

The heterogeneous nature of the service sector implies that there hardly is any single, or uniform policy that could facilitate R&D in services across the variety of sectors. More extensive analysis of the R&D in services domain can point out the most prominent areas for policy intervention. Deeper knowledge of these areas is needed and could be included in FP 7 agenda, it could thus establish a distinct sub-programme. Possible areas for exploring the nature of R&D in services include:

- Building an understanding that links the wider socio-economic trends, such as demographic trends, and R&D in services
- R&D in different service industries covering both traditional services and new technology based services
- R&D in services in manufacturing industry context
- Outsourcing related R&D in services
- Management of R&D in services
- Human resources and skills related to R&D in services
- R&D related to service activities that cut across the industries (e.g., Knowledge Intensive Business Services, KIBS, and Knowledge Intensive Service actions, KISA)
- Further development of R&D in services related indicators and statistics
- Research that can facilitate the availability of qualified service workforce for all types of services
- The role of intellectual property management and protection in R&D in services context
- Research on the services-technology interface, in particular, services as driver of new technologies and innovation
- Standardization that can facilitate the development of large competitive service markets

³ The individual universities can take turns in organising the doctoral courses, for instance on a yearly basis. This will create an international faculty and an international cohort of students giving a strong boost for researcher mobility and knowledge dissemination.

c. Foster co-operation and knowledge exchange across policy areas that bear influence on R&D in services

There is a great variety of R&D activities in services indicating that many policies will bear influence on it. Services related R&D and innovation frequently relies on collaborations between disciplines, across the sectors and beyond regions – and it is often affected more by mainstream policies than by those aimed directly at innovation. Effective policy measures will require a sector-wide view, led by industry and service-based organizations, supported by government and bringing in users and suppliers where appropriate. Sometimes it can involve the extension of existing policies beyond their traditional focus on science and technology. Often it will also mean that public policy will take measures to ensure the right conditions for R&D and innovation. This can happen through intelligent regulation, taxation, procurement, and education policy.⁴ Possible policy measures in the area of horizontal policy impacts on R&D in services include the following:

- *Further analysis of the meaning of horizontal policy for the R&D in services, what are the key policy actors and policy delivery methods in this area? The focus needs to be in the key policy areas that are most relevant for the R&D in services, such as research, education and training policies.*
- *Joint research initiatives by the Member States and Associated Countries in the R&D in services.*
- *Services Directive and its (expected) impacts on R&D in services. For instance, the influence of opening markets and increased competition*
- *To initiate an exchange of R&D and innovation in services bringing together different stakeholders including in particular those who have insufficient lobby within R&D/innovation policy like SMEs.*

d. Initiate developments in the institutions and conventions so that they will more effectively support the development of R&D in services

It is important to take measures that build up the status and reputation of R&D in services. The official R&D definition is an important indicator that many policy measures and statistics rely on. At present, the classical definition for R&D excludes many elements that are fundamental for R&D in services. There are also policy measures that seek to support service development but the development activities are limited by the official R&D definition, e.g. by narrowing the support in the area of technological development. As a result, public support for R&D in services has a bias towards technology development. This is not optimal way to facilitate R&D in services which typically relies on the new applications of existing, often already commercialised, technologies rather than new technology development. This also involves a conflict with the broad based innovation strategy and new state-aid rules that both recognise the specific features of services. Also the official innovation definition presented in the Oslo manual, has already been updated to cover service innovation.

⁴ Nesta 2007, Hidden Innovation – How innovation happens in six ‘low innovation’ sectors, National Endowment for Science, Technology and the Arts, Research report, June 2007, London, UK.

Hence, it would be logical to grant official status also for the R&D in services by including its key elements into the updated Frascati manual definition. The Oslo manual could provide a solid starting point for this development work, bearing in mind that R&D is only one contributor to the innovation. The development and adoption of an up-dated R&D definition - inclusive of the key elements of R&D in services - can be seen as an important step forward in the development towards more favourable framework conditions for the R&D in services:

- *Development of an R&D definition that is more inclusive and has greater accuracy in recording all key aspects of the R&D in services.*
- *The NESTI group (National Experts on Science and Technology Indicators) that operates under the OECD, is encouraged to further develop the Frascati Manual, so that it will provide the tools and indicators by which the R&D in services can be better captured in statistics.*

The removal of such institutional barriers can give more prominent position for R&D in services, and it will also be a major step in the development of more accurate R&D statistics.

e. Make use of the Open Method of Coordination in sharing knowledge on the good practices in supporting R&D in services

The CREST Working Group on R&D in services has conducted an initial mapping of national policies that target services and seeks to facilitate services R&D. Further actions are needed in order to deepen the knowledge on R&D in services, and to keep up with the rapidly evolving policy measures, good practices and bottlenecks. Services represent a dynamic area that attracts increasing interest among policy makers, academics and business practitioners. Measures ought to be taken towards the mapping and sharing of good practice policy elements related to R&D in services. Information of policy measures, their impacts and practical R&D case studies ought to be collected, organised and disseminated on the need basis.

CREST and the Open Method of Coordination provide a well-functioning learning platform for the follow-up work on R&D in services. It is important to deepen and disseminate the latest knowledge related to the R&D in services. Possible policy measures include:

- *Monitoring and sharing the impacts of the policy measures related to R&D in services*
- *Mapping, analysis and dissemination of information on evolving R&D practices in services, business case studies and cluster analysis can be named as examples.*

In Conclusion:

- There is a need for policy actions that enable better understanding of the nature of service innovation and of benefits for R&D in services. More accurate statistics and improved conceptual clarity are important enablers of further development in the area.

- R&D in services is a multidimensional, multilayer phenomenon that needs further exploration. The notions of ‘service sciences’ and ‘service engineering’ may provide ways to develop deeper understanding of R&D in services⁵. An effective dissemination of this knowledge to a wider audience including policy makers, academic community and business practitioners would be desirable.
- The multidimensional character and variety of R&D in services implies that many policies will bear influence in it. This calls for horizontal policy approach to influence R&D in services more than specific R&D measures.
- It is important to initiate policy actions that can remove the institutional barriers that inhibit the development of R&D in services. The development and adoption of an up-dated R&D definition - inclusive of the key elements of R&D in services - can be seen as an important step forward in the development towards more favourable framework conditions for the R&D in services.
- Measures ought to be taken towards the mapping and sharing of good practice of policies related to R&D in services and service innovation. Information on policies and implementation instruments, their impacts and practical R&D case studies ought to be collected and disseminated.

⁵ The key to service science and service engineering is their interdisciplinary nature, focusing not merely on one aspect of service but rather on service as a system of interacting parts that include people, technology, and business. As such, service science draws on ideas from a number of existing disciplines – including computer science, cognitive science, economics, organizational behaviour, human resources management, marketing, operations research, and others – and aims to integrate them into a coherent whole.
http://en.wikipedia.org/wiki/Service_Science,_Management_and_Engineering