

MEETING THE CHALLENGE OF EUROPE 2020

THE TRANSFORMATIVE POWER OF SERVICE INNOVATION

REPORT

by the Expert Panel on Service Innovation in the EU

Partnerships for better
innovation support



Innovation in Services
Expert Panel

The **Expert Panel on Service Innovation** in the EU consists of 20 innovation experts from 15 different countries across Europe. All the experts have a deep understanding of innovation policy development and particular expertise on innovation in services and industry. The Expert Panel includes policy makers, representatives of innovation agencies and other innovation support providers, industry representatives and representatives of relevant associations, interest organisations and academic scholars.

This report “Meeting the Challenge of Europe 2020: The Transformative Power of Service Innovation” is produced by the Expert Panel on Service Innovation in the EU, with assistance from the Secretariat to the Expert Panel. The Secretariat consists of staff from the Danish Technological Institute (DK), SPRU at the University of Sussex (UK) and eSTRAT (Lux).

The views expressed in this publication, as well as the information included in it, do not necessarily reflect the opinion or position of the European Commission and in no way commit the institution.

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FOREWORD

The year 2010 would seem to be the year when the European Community drew a line under the financial crisis of 2008 and began to focus on the challenges ahead. Europe 2020 ¹ and its flotilla of flagship initiatives provide a coherent policy framework and powerful response to a complex array of issues.

The question set by the Expert Panel is “what can service innovation and service firms themselves contribute to the concept of a smarter, sustainable, inclusive Europe, and what key policy measures might unleash the EU’s potential”? Our report seeks to answer that question. Only time will tell to what extent our analysis and recommendations are proved correct, but the emphasis that we give to the transformative power of knowledge intensive services as the vector for change in a rapidly evolving European economy. Indeed, the centrality of services and service innovation to delivering the 2020 Strategy is evidence based. It is also consistent with the recent report prepared by the McKinsey Global Institute ² on economic growth and renewal in Europe. The report not only confirms the broad thrust of the Europe 2020 Strategy, it also identifies that the key to productivity and growth lies in the untapped growth potential of Europe’s service sectors.

We are under no illusions about the scale of service innovation implied. The vision articulated in Europe 2020 requires fundamental system transformation in almost all areas of the economy. Technology has a critical role to play, but technology innovation alone is not enough. One of our core messages is the need for policy to be holistic and developed through the lens of the customer. Indeed, in developing policy, it is instructive to consider the resurgence of Apple Inc., which has transformed its fortunes on the back of a series of innovations that combine iconic devices with a new service model. Apple invests heavily in scientific and technological R&D. However, the key factor in its extraordinary success (its market capitalisation has risen from around \$2 billion in 1997 before Steve Jobs resumed control to around \$300 billion at the end of 2010) relates to the company’s flair for design, ability to integrate a range of technologies, and Steve Jobs’ personal focus on – some would say obsession with – the user experience. Arguably, his advice to software developers, “You’ve got to start with the customer experience and work back to the technology – not the other way round” could be the watchword of this Expert Panel.

The challenge is how to translate the focus on customer experience into a policy environment. The Expert Panel considers that large-scale system demonstrators, which feed through into procurement processes, are an important and underutilised tool for promoting innovation particularly in relation to key societal challenges. They are the laboratory of a service economy and enable a systemic approach to policy development. Furthermore, the joining up or linking of demonstrators gives the opportunity to develop a Europe-wide policy framework with the scope for shared learning, the development of user driven standards, economies of scale, and cluster development. It is for this reason that our recommendations give weight to this concept.

Given the right framework, we have no doubt that European knowledge intensive service firms are capable of delivering the envisaged transformation. The report and its complementary case studies illustrate the strength of EU capability. However, that capability will remain dormant if innovative SMEs that are so important to the future growth of Europe are not given the opportunity to exploit their potential across the Union. We therefore support the measures contemplated in the recently published Commission Communication “Towards a Single Market Act” ³, particularly as they relate to improving market access. The barriers to entry and growth are especially acute for service firms, and we need to replicate the dynamic

1 “Europe 2020: a strategy for smart, sustainable and inclusive growth”

2 http://www.mckinsey.com/mgi/publications/beyond_austerity_europe/index.asp

3 COM (2010) 608 final

that has been created in product markets in the Single Market for services. Therefore, a key recommendation is to target support on innovative service SMEs with the potential for rapid growth. This chimes with the Commission's own acid test for its innovation strategy, i.e. the share of fast growing, innovative companies in the economy.

This report "Meeting the Challenge of Europe 2020: The Transformative Power of Service Innovation" is produced by the Expert Panel on Service Innovation in the EU, with assistance from the Secretariat to the Expert Panel. The Secretariat consists of Emilie Normann from the Danish Technological Institute (DK), Paul Nighthingale from SPRU at the University of Sussex (UK) and Robbert Fisher from eSTRAT (Lux).

I am grateful to the Commission for setting us the challenge and to DG Enterprise and Industry, in particular, for acting as a sounding board for our ideas. I am grateful to the Secretariat for all the support they have given in the preparation of meetings, in providing evidence, working papers, and drafts. Most of all, I should like to thank the Expert Panel for giving of their valuable time and for the positive and constructive spirit with which they have engaged in this task.



Allan Mayo
Chairman

Table of content

Executive summary	4
<hr/>	
PART I: Service innovation as a driver of the Europe 2020 Strategy	7
1.1 The concept of the transformative service innovations	7
1.2 Smart Growth	8
1.3 Sustainable growth	9
1.4 Inclusive growth	10
<hr/>	
PART II: Policy recommendations	12
2. Raising the awareness of the future potential of service innovations	12
3. Strengthening political leadership	13
3.1 Improving the ability of less developed regions to promote service and service innovation	14
4. Supporting new globally competitive markets and businesses through service innovation	15
4.1 The European Creative Industries Alliance	15
4.2 How to encourage service innovation in the future	16
4.3 Policy to encourage gazelles	17
5. Exploiting service innovations to address societal challenges	17
5.1 The demonstrator approach	18
5.2 Proposed demonstrators	19
Demonstrator 1: Sustainable communities	19
Demonstrator 2: Creating dynamic regions	20
Demonstrator 3: Sustainable coordinated transport	21
<hr/>	
6. Conclusions and Recommendations	22
<hr/>	
Annex 1: Members of the Expert Panel on Service Innovation in the EU	26

Executive summary

As the Europe 2020 Strategy ⁴ makes clear, Europe's future wealth and the wellbeing of its citizens depend on how effectively its businesses innovate in the face of major challenges. It has therefore targeted strategy on three complementary themes: smart, sustainable and inclusive growth. To achieve its goals, it has launched a series of seven flagship initiatives ⁵.

The Expert Panel's task has been to identify how services and innovation in services can help to deliver the Strategy. In doing so, it builds on earlier work and relevant studies, such as the Commission Communication "Towards a Single Market Act", which estimated that implementing the Services Directive would generate between €60-140 billion, or 0.6-1.5% of European GDP ⁶. It also points to the fundamental changes taking place in the nature of innovation: no longer viewed as purely technological, but rather how firms exploit new technologies, not only to develop new products and services, but also new channels to market, new business processes, new organisational structures and new business models. As a result, markets are evolving, new strategic partnerships developing and old-fashioned concepts, such as the distinction between the manufacturing and service sectors, are being blurred, if not overturned.

The process of change presents both an opportunity as well as a challenge. European firms are already succeeding in many new global markets and European service firms are helping to transform businesses across the economy. Indeed, many European firms lead the world in their ability to integrate high-value manufacturing with design and marketing services to create many of the world's most iconic, customer focused luxury brands. We need to build on that success.

In relation to **smart growth** the report describes how the ability of technology to capture, store, manipulate, and communicate increasing quantities of information to fixed or mobile network devices is transforming the way European citizens work and live. This smart infrastructure now increasingly underpins the economic activity of all firms, with the result that innovations in the services that deliver and exploit it have the potential to transform large parts of the economy.

In relation to **sustainable growth**, new services increasingly enable a shift towards more intelligent use and reuse of resources. As the price of raw materials rises, regional water stress increases, and a global middle class emerges, the world market for sustainable environmental services will expand substantially. The Expert Panel considers that the demanding European regulatory environment and public concern about sustainability will give European firms a first mover advantage that will enable them to capture significant global market shares in high-value markets, such as intelligent transport systems, and environmental impact management.

The shift from product to service systems innovation will influence **inclusive growth** in two main ways. First, smart infrastructure reaches out to, and supports, marginalised groups. Second, by supporting involvement, they empower such groups to help themselves, and to develop the skills to participate actively in modern society.

In summary, our case studies and analysis have revealed that:

- Developments in ICT are transforming our ability to model scenarios, collect and process information, in "real time", and to act upon changing circumstances. The growth of cloud computing is reducing the cost of entry for innovative SMEs and enables successful firms to scale up activities as demand expands, delivering services down different channels, anytime, anywhere.

⁴ 'The Europe 2020 Strategy. A European strategy for smart, sustainable and inclusive growth', EU 2010

⁵ <http://www.leru.org/index.php/public/news/new-innovation-agenda-launched/>

⁶ Relevant work also includes the Monti report from 2010 'A new Strategy for the Single market. At the service of Europe's Economy and Society', M. Monti, May 2010, http://ec.europa.eu/bepa/pdf/monti_report_final_10_05_2010_en.pdf. Other work worth mentioning is the recently published growth report by NESTA, which compares business growth dynamics in the EU and the USA, and the recent SIW report on high growth firms or "gazelles". This report concluded that many EU "gazelles" are service firms and many originate in less developed regions of Europe.

- New service concepts are changing business offerings from asset purchase with service contracts to outright service models. This is blurring the traditional distinction between manufacture and service and requires firms to review business structures and pricing/revenue policy.
- Customers themselves are playing an active role in the development of goods and services, which is transforming their value added. The ability to identify, engage, and direct consumer interest and knowledge has been driven by innovative service firms.
- Social networks are developing rapidly and beginning to influence business networks with the result that there is a blurring of the boundaries between professional, business and social networks, the full implications of which are still to be comprehended and realised.
- Concerns about the environment and the rising price of raw materials, energy and water are driving business towards more resource efficient processes and a growing recognition that an ethical approach to sustainability can be a factor in competitive advantage. Service firms are leading businesses through this process.

As a result of these trends, global value chains are being disrupted and what emerges from this report is the potential of services and service innovation to transform whole sectors of the EU economy, indeed to transform the fortunes of whole regions.

We believe that the key underlying challenge is to develop a coherent policy framework that gives full flow to this concept at all levels of policy making. Our recommendations address five main themes to achieve this goal and place transformative service innovation at the heart of European industrial and innovation policy.

1. Raise awareness of the transformative potential of service innovation and its contribution to EU competitiveness

The Expert Panel recommends that:

- The European Commission develop a European Service Innovation Centre (ESIC) to strengthen the links between policy makers, business and academia. The ESIC can help raise awareness of new developments and emerging opportunities related to service innovation.
- The ESIC act as a central hub of expertise, and collaborate closely with the Institute for Prospective Technological Studies in Seville, the International Institute for Applied Systems Analysis near Vienna, universities, think tanks, industry and knowledge intensive service sector associations, to provide authoritative analyses, sectoral and foresight reports, and evaluations of support programmes.
- The findings of the ESIC inform the thinking of the High Level Group on Business Services, which the Commission is proposing to establish.⁷

2. Strengthen political leadership at the European, national and regional levels

The Expert Panel recommends that:

- The High Level Group provide the political leadership that is necessary to promote a service perspective in policy making and take forward the recommendations of this report.
- Regional innovation strategies give particular weight to the role which services and service innovation might play in contributing to growth and economic development.
- Where appropriate, Member States review their strategies towards the use of Structural Funds and, in particular, develop measureable outcomes in relation to supporting innovative services. Such an approach could lead to their active participation in the Innovation Partnerships and large-scale demonstrator programmes set out in this report.

⁷ As worded in the European Commission document 'An Integrated Industrial Policy for the Globalisation Era: Putting Competitiveness and Sustainability at Centre Stage, COM(2010) 614: "... The Commission will ... set up a High Level Group on Business Services to examine market gaps, standards and innovation and international trade issues in industries such as logistics, facility management, marketing and advertising (2012) ...

3. Build new competitive business from service innovation and improve the agility of policy making to do so

The Expert Panel recommends that:

- The European Commission adopt established mechanisms for encouraging the development of the new innovative services. The European Creative Industries Alliance may provide such a model.
- Under the Alliance, the Commission set up an Expert Group to help the Commission and Member States develop and share a common vision of how creative industries can contribute to modern industrial policy, to monitor the Alliance's progress, and to liaise with the High Level Group on Business Services.

4. Develop dedicated programmes in support of innovative services

The Expert Panel recommends that:

- The European Commission develop a Service Gazelles Programme to support high impact gazelles within the EU.
- The European Commission implement initiatives to foster and strengthen joint innovative interactions between service and manufacturing companies.

5. Promote the application of service innovation to meet societal challenges

The Expert Panel recommends that:

- The European Commission set out its model for Innovation Partnerships in relation to its chosen pilot of assisted living at the earliest opportunity.
- Urgent consideration be given by the European institutions to the selection criteria and governance of Innovation Partnerships/demonstrators with a view to adopting this policy tool as a key driver of innovation and industrial policy in the EU.
- The next R&D Framework Programme (FP8) give due consideration to the technologies that underpin the "smarter", sustainable systems which enable firms to develop responsive real time services in sectors as diverse as transport and logistics, construction and facilities management, energy distribution, telecommunications and financial services.

PART I

Service innovation as a driver of the Europe 2020 Strategy

The 'Europe 2020 Strategy. A strategy for smart, sustainable and inclusive growth'⁸ puts forward a dynamic vision of an effective social market for the 21st century. It identifies three priorities: Firstly Smart Growth to develop an economy based on knowledge and innovation. Secondly, Sustainable Growth to promote a more resource efficient, greener and more competitive economy. Thirdly, Inclusive Growth to foster a high-employment economy delivering social and territorial cohesion. The Europe 2020 Strategy was launched in March 2010 and was followed by the launch of seven flagship initiatives⁹. These flagship initiatives are intended to be the main tool for implementing the ambitious targets of the Europe 2020 strategy.

The Europe 2020 Strategy also sets out five measurable targets for 2020 that will steer the process towards growth and innovation:

1. 75% of the population aged 20-64 should be employed.
2. 3% of the EU's GDP should be invested in Research & Development.
3. The "20/20/20" climate/energy targets should be met (including an increase to 30% of emissions reduction if the conditions are right).
4. The share of early school leavers should be under 10% and at least 40% of the younger generation should have a tertiary degree.
5. 20 million less people should be at risk of poverty¹⁰.

1.1 The concept of transformative service innovations



Services are transformative when they disrupt traditional channels to market, business processes and models, to enhance significantly customer experience in a way which impacts upon the value chain as a whole.

There is a paradigm shift taking place in global value chains and business structures. The role of the service element forms an important part of modern business strategy; indeed, services provide much of the technical and social infrastructure of a modern economy. Innovations in these service systems therefore have the potential to profoundly change the innovative potential of other sectors and catalyse the drive towards economic growth.

The Expert Panel has identified three types of service sectors that have this transformative capacity:

1. Networking, connecting and brokerage services which link consumers, firms and supply chains and improve the allocation and distribution of goods and information in society.
2. Utilities and infrastructure services, such as telecoms, energy and waste disposal, that increasingly provide higher value-added services for their customers.

⁸ http://ec.europa.eu/growthandjobs/pdf/complet_en.pdf


⁹ The seven Flagship Initiatives are: "Innovation Union"; "A Digital Agenda for Europe", "Resource efficient Europe", "An industrial policy for the globalisation era", "An Agenda for new skills and jobs", "European Platform against Poverty" and "Youth on the move"

¹⁰ See introduction in Europe 2020 Strategy. A strategy for smart, sustainable and inclusive growth'

3. Knowledge Intensive Business Services (KIBS) that collaborate closely with their customers to help upgrade their technology, organisational processes, and business models as well as transfer knowledge and experience across sectors.

These *transformative services* are typically technically sophisticated. Rather than just pushing technology, they work back from users' needs and changing concerns about environmental or social impacts, and find solutions, that often draw on technology, to address them. This matching of user requirements to sophisticated technology allows them to fundamentally change the processes their customers use to design, develop and deliver goods and services. They help transform channels to market, business models, offers to customers, payment systems, and, consequently, the final customers' service experiences. By making the firms they interact with and support more innovative, they can help generate and enhance virtuous cycles of innovation across the entire European economy.

1.2 Smart growth

 **Smart growth involves improved acquisition and management of information about customer needs and behaviours, and business processes, to create better, or completely new, goods and services with higher added value.**

The future economic prosperity of Europe will depend on moving beyond its current productivity and innovation constraints to generate new, higher value-added jobs in firms that can compete in an increasingly innovative, interconnected, competitive global market. To do this, European firms will need to push the technological frontier more than they do today. Europe does not lack entrepreneurial spirit. Indeed, across all sectors similar numbers of European and American firms are being founded each year.¹¹ Europe differs because new American firms grow faster and create more jobs, and these jobs are often of higher productivity as the American firms are larger. Europe needs to address the constraints that are holding back the growth of all its firms and improve the productivity of its long tail of marginal, undersized and poor performing firms.

Europe also needs to address the direction of this growth. In particular, it must address citizens' wellbeing and the environment. Economists have long highlighted that growth does not come from just producing more of the same kinds of things. Instead, growth involves allocating social and economic resources towards higher value activities. As economies develop, growth becomes more about quality than quantity. As a result, the economy becomes more dependent on the intelligent and effective coordination of goods and services between sectors.

A key role in the upgrading processes that drive smarter growth will be played by the service sectors, and in particular business-to-business services. These firms create value by building "intelligence" into the design and modelling of the processes, networks, and customers they serve. By better understanding how to transform their customers' working practices, these service firms will play a key role in delivering the smart growth highlighted in the Europe 2020 Strategy.

These services are becoming more important because they have moved beyond simple information processing to exploiting advanced ICT technologies. They now incorporate more feedback loops and provide fast and reliable analysis of the large amounts of data that can be gathered in a modern information-intensive economy. Advances in semantic web technologies, new sensors, and interoperable broadband channels that link firms and customers through fixed and mobile networks provide them with new opportunities for gathering, processing, analysing and re-bundling information. It is this smart analysis that provides them with the ability to transform other parts of the economy. A smart economy requires smart firms, and smart firms often require smart services.

¹¹ Bartelsman, E., Scarpetta, S., and F. Schivardi (2010) Comparative Analysis of Firm Demographics and Survival, *Industrial and Corporate Change*, 14, 3, 365-391

As the European economy becomes smarter, the effective acquisition, analysis and use of information will increase in importance. Firms have already moved from seeing ICT as a capital investment to a more service-based utility model, where access to business information is purchased as a continuous, real time service. The convergence of semantic analysis, user-generated content, and a range of ICT technologies has provided a new infrastructure for gathering, analysing and acting on economically important information. Furthermore, the information that was previously poorly integrated can now be seamlessly merged to form a “cloud” of distributed computing infrastructure.

Brokerage services exploit this infrastructure to link supply and demand through various intermediary services that allow more user-driven, collaborative and open methods of innovation. They include online knowledge transfer and education, web auctions and even distributed, project-based innovations funded by crowd-sourced micropayments. Large retailers, for example, have generated significant productivity gains along their supply chain, while logistics companies can improve the performance of a wide range of economic coordination activities in areas from healthcare to “near source” assembly and recycling. Such services can reduce costs, help clarify market demands, increase the quality of service experiences and open up the market to previously excluded entrepreneurs. Online retailing has transformed markets by allowing small firms and even individual entrepreneurs to reach the “long tail” of small numbers of distributed consumers, who can now be pooled, targeted, and actively involved in the co-production of goods and services.

Similarly, *semantic analysis services* combine sensors, cloud computing, smart mobile devices and data analytics to enable organisations to collect, analyse and exploit large quantities of data on their customers and their own internal processes. Examples include weather-based logistical support services, location-based mobile services and smart simulation-based training services. These services are often characterised by high levels of user generated content so that customers can be directly targeted and involved in the improvement, development or delivery of products and services. Finally, *business innovation support services* create smarter business models for their customers and facilitate innovation by linking producers and end-users with service developers, suppliers, designers and financiers. In all three cases, transformative services exploiting smarter infrastructure have a disruptive effect elsewhere in the economy.

1.3 Sustainable growth



Sustainable growth is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

The Europe 2020 Strategy marks an important change in European policy making with an explicit requirement that growth is sustainable.¹² This will require Europe to find innovative, long-term solutions to climate change, rising material prices, the preservation of biodiversity, water shortage and pollution. This, in turn, will require a shift towards new forms of sustainable, energy efficient transport, energy, food production, manufacturing and housing. This cannot be achieved through simple technical fixes, tax breaks, incentives or incremental changes in behaviour. Such approaches have little impact, in large part because firms have little room to respond to incentives when they are constrained by wider social and economic systems. Europe’s carbon intensive economy has built up a range of supporting processes, regulations, operating procedures, market structures, standards, infrastructures and patterns of consumer demand that interact to strongly constrain change. Consequently, sustainable growth will require a *systems transition* to transform existing markets, technology, institutions and products.

Services will play a catalytic role in this transformation for two important and interconnected reasons. First, producers will need to internalise waste and pollution. This can be done by moving to more service-

¹² The Europe 2020 Strategy obliges Member States “to use regulation, building performance standards and market based instruments such as taxation, subsidies and procurement to reduce energy and resource use and use Structural Funds to invest in energy efficiency in public buildings and in more efficient recycling.”

based business models that better align economic incentives and sustainable growth. Energy companies across Europe are moving from business models where they ‘manufacture’ energy, to models where they provide value-added energy services¹³, European firms are global leaders in this transformation, with Rolls Royce’s “power by the hour” service model for aircraft engines showing how a shift from selling engines to providing cleaner more sustainable power-services can be highly profitable¹⁴. Here European and Member State policy can play a key role in driving innovative improvements to create a lead for European firms in a rapidly expanding global services market. The shift towards the reduction in environmental costs, for example, can be supported by using life-cycle approaches in public procurement, where the environmental impacts from extraction, transformation, distribution, consumption all the way to decommissioning and disposal are captured and priced.

Such changes are complex. Organisations across Europe will need support to use new technologies and adopt new ways of working. Consequently, the second role for services is in providing that support and consultancy. By working in collaborative partnerships with their customers, innovative services can diffuse best practice throughout Europe. They can help firms introduce innovative business models into new markets, help make the production and consumption of goods and services more sustainable, and analyse and reduce environmental risks and pollution. The increased application of ICT technologies in infrastructure networks, for example, is enabling firms to offer higher value-added environmental services¹⁵.

1.4 Inclusive growth



Inclusive growth is development which enables all members of society to participate in the process of wealth creation, in a way commensurate with their own abilities and potential.

The Europe 2020 Strategy also focuses on inclusion to ensure that all European citizens benefit from growth. While economic growth is the main driver of social inclusion through its impact on employment and poverty reduction, it is not enough on its own. Innovative solutions that cut across the private and public sectors are necessary to reach out to marginalised groups, increase employment, and create a socially inclusive economy. This will not be an easy task, and Europe’s failure to address major structural problems, such as high levels of youth unemployment, suggests that sustained engagement and political will are necessary. The Expert Panel believes that the public sector will have to take the leading role in encouraging and then supporting any private sector involvement. In fact, political will, political decision-making, and public sector investment are likely to be preconditions for any private sector involvement.

A key challenge for a European policy on service innovation is that inclusive growth mostly touches upon local and regional issues with high degrees of specificity. Roles at EU level lie in facilitating and encouraging greater inclusivity, i.e. by providing and disseminating best practices and removing barriers for cross-border (and inter-regional) activities. Obviously regional policy, with its structural funds and cohesion policies, can contribute significantly. European Commission policy is to make announcements regarding plans that will be orientated towards the overarching aims of Europe 2020 (embracing “inclusive growth”) and will reflect the philosophy of supporting potential rather than compensating disadvantage¹⁶.

Service firms and non-profit organisations can play a transformative role in improving inclusiveness. As NESTA’s “Innovation Gap” report highlighted, some of the most innovative organisations, particularly in

¹³ With manufacturing based patterns of growth, where customers pay for products, more resource use generates more outputs and more profits. However, with a service system based pattern of growth, where customers pay for levels of service, resource use is a cost for producers, who have strong economic incentives to find innovative ways to reduce inputs while maintaining, or improving the services they offer. A car manufacturer, for example, does not want to sell fewer cars, but the same firm selling transportation services would have an incentive to reduce production if cars could be shared and service income maintained.

¹⁴ On ‘power by the hour’ and the shift to service based business models see Nightingale, P. (1997) unpublished DPhil thesis, University of Sussex.

¹⁵ Even simple measures, such as smart metering that makes citizens aware of energy use could reduce carbon emissions by 15% by 2020. European Commission, DG INFSO, March 2009, Communication on mobilising Information and Communication Technologies to facilitate the transition to an energy-efficient, low-carbon economy.

¹⁶ http://ec.europa.eu/regional_policy/sources/docoffic/official/reports/cohesion5/pdf/5cr_summary_en.pdf

the use of ICTs, are NGOs and charities that exploit new technologies for smart, inclusive and sustainable ends¹⁷. Transformative services can complement uniform public service provision with a more decentralised, user-engaged, service-based model that helps bring people back into employment and social engagement. Just as smart services can reach out to the "long tail" of marginalised consumers, inclusive services can reach out to, integrate, and support socially marginalised groups to co-produce the bespoke public services they require.

Both types of services are consumer-based, demand-focused, and people-driven. They connect people and allow them to share information, knowledge, and access to resources. The emphasis on empowering the co-production of services directly helps with skills development, and their ability to integrate and connect the "long tail" allows them to improve the coordination of supply and demand in markets thereby driving socially inclusive growth.

Inclusive services focus on the large number of small firms that employ a large proportion of hard-to-reach workers. Many unskilled European citizens take their first job in low-tech service sectors that provide them with their first and sometimes only source of economic engagement. However, even seemingly low-tech, low-productivity service sector jobs often involve higher level tasks and engagement with productivity-enhancing technology. These service firms provide informal and sometimes formal training in areas such as catering, accounting, management, and ICT use that upgrade the skills of individuals, firms and communities. They prepare them for playing a role in more added value sectors.

This can be seen in the impact of smart inclusive services on tourism and the wider experience economy for instance. Tourism is a sector particularly relevant for inclusive services because geographic areas with natural or regional assets that attract visitors are often in the poorer regions of the EU.

Transformative tourism services do two important things. First, they significantly enhance the experience of tourists by allowing them to plan and customise their stays, thereby adding value. Second, they provide local workers with an opportunity to upgrade their transferable ICT skills. In doing so, they help move tourism and the region into a virtuous cycle of higher skills and higher added value.

Across smart, sustainable and inclusive growth, transformative services will play a vital role in driving change in the European economy to improve the productivity and innovativeness of the entire economy, and shift the direction of growth to address issues of sustainability and social inclusion. This transformative potential is now enhancing the link between innovation and industrial policy, as the challenges Europe faces increasingly have to be addressed in ways that exploit the potential for innovations in one sector to transform another. In doing so, new sectors can transform and become more competitive, and new configurations and interactions between sectors, between firms, and between firms and consumers can open opportunities for new industries to emerge.

17 NESTA (2006) 'The Innovation Gap', NESTA London.

PART II

Policy recommendations

In the following sections, we seek to identify the barriers to service innovation and translate the needs of innovative service firms into effective policy action. We develop a five point strategy which we believe, together with other Commission actions to promote a Single Market for services (and e-services), addresses these barriers at all levels of policy making. In summary it relates to:

- **Raising awareness.**
- **Strengthening political leadership.**
- **Improving the agility of policy making.**
- **Developing dedicated programmes in support of innovative services.**
- **Applying service innovation to societal challenges.**

2. Raising the awareness of the future potential of service innovations

The preparation of this report has highlighted the fragmented nature of the research and evidence base in relation to service innovation. It has also revealed a significant difference in the focus and awareness between Member States. The Expert Panel therefore recommends the establishment of a European Service Innovation Centre (ESIC). Its objectives would be to raise awareness of the effects of service innovation on the different sectors and demonstrate, through evidence and research, how service innovation can help address policy priorities, especially those set by the Europe 2020 Strategy.

In order to achieve the above goals, the ESIC should:

- Provide relevant, timely, and high-quality evidence and information to support policy makers in improving policy, practice, and management of innovation.
- Increase awareness in governments and the private sector of trends in user-demands, service innovation solutions and the growth of new service businesses.
- Increase awareness about new developments through foresight activities and develop appropriate policy responses to exploit European potential.
- Disseminate research and other findings to the widest possible range of stakeholder groups of policy makers, private sector and academia through the networks it would create.

The size and scope of the task compel a networked approach with institutes not only in Member States, including the Institute for Prospective Technological Studies (IPTS) in Seville ¹⁸ and the International Institute for Applied Systems Analysis (IIASA) near Vienna ¹⁹, but also with leading institutes worldwide. One example of how new data and evidence can be provided is NESTA's "Creative Clusters and Innovation" study, which combines the methodology and data of the European Cluster Observatory with Community

¹⁸ <http://ipts.jrc.ec.europa.eu/>

¹⁹ <http://www.iiasa.ac.at/>

Innovation Survey and national data²⁰. It provides novel insights into the dynamics of co-location patterns of sub-groups of creative and other industries (i.e. who clusters with whom and the evolution of those clusters and relationships through time).

The existing European Cluster Observatory could also be a model²¹. It offers comparable quantitative analysis of business clusters across the EU based on a standard methodology. Funded under the Europe INNOVA initiative, the Observatory informs policy makers, practitioners, and researchers about European clusters, policies and initiatives, and provides a comprehensive database and mapping of cluster organisations. Another possible model is the approach followed under the PRO INNO Europe® INNO-Learning Platform for the development of mini-studies on several innovation subjects²². Whatever its final form, the ESIC should be strongly connected to the planned demonstrators and the potential Service Gazelles Programme. It should adopt a sector-based focus as well as explore cross-sector developments, to address the competitiveness of entire service systems rather than just focusing on potentially isolated technology-oriented innovations.

Further research in ESIC and other initiatives could be undertaken to understand better:

- The nature of service innovation itself, the type of investment it requires, the relative importance of different intangible elements (i.e. software, branding, skills) and the relationship between investment, service innovation and GDP.
- How service firms exploit their capabilities across borders and how innovation contributes to exports.
- Which sectors are the most innovative and why. Where are the spill-overs the greatest?
- What framework conditions and policy interventions promote service innovation? Where is service innovation most active and why, and what are the regional concentration and specialisation patterns?
- What are the ecological/environmental impacts of service innovations? What balance of interventions promotes such impact, e.g. regulation, standards and norms, etc.?

3. Strengthening political leadership

One of the current paradoxes of policy development is that despite widespread recognition of the importance of services, they do not feature strongly in policy documents or discussions. Its role in the economy tends to be overlooked, partly because of traditional views about the nature of innovation, and a lack of systemic approaches to promoting it.

The Expert Panel considers the leadership role of Government to be critical because of the systemic nature of service innovation and because of the centrality of Government in supporting the three broad elements which underpin it, namely:

1. A modern infrastructure, particularly a globally competitive and secure ICT infrastructure.
2. Market frameworks that provide reliable, clear signals through the price mechanism, regulations and standards about market opportunities, innovation bottlenecks and organisational performance.
3. People and businesses with both the capacity and motivation to innovate.

Service innovation is highly contextual and, while both Member States and the EU have policy measures in each of the above areas, innovative solutions to societal challenges will only be seized if policy makers ensure that policies relating to infrastructure, market frameworks and capability are aligned. It is for this

²⁰ See Chapain, Cooke, De.Propris, MacNeill and Mateos-Garcia, [2010] 'Creative clusters and innovation. Putting Creativity on the map'. NESTA report. And also http://ec.europa.eu/enterprise/policies/innovation/facts-figures-analysis/european-cluster-observatory/index_en.htm

²¹ <http://www.clusterobservatory.eu>

²² <http://www.proinno-europe.eu/page/inno-learning-platform>

reason that the Expert Panel welcomes the Commission proposal in “An Integrated Industrial Policy for the Globalisation Era”²³ to establish a High Level Group on Business Services. The work of this High Level Group should be broad in scope because, while promoting a stronger internal market for services is important, it is not sufficient to achieve the Europe 2020 goals. The Expert Panel believes the High Level Group also needs to ensure that the other flagship initiatives are aligned to support services, and that it should provide the political leadership in encouraging new emerging services in a fast moving environment.

3.1 Improving the ability of less developed regions to promote services and service innovation

While a High Level Group can offer strategic direction, the Expert Panel has noted substantial differences between regions in their ability to foster service innovation and exploit it in the future. This is partly due to poor infrastructure, particularly access to broadband and a lack of skills to develop the service levels in the areas in question. However, there are significant opportunities for regions to develop well-targeted strategies, for instance based on sustainable tourism²⁴. Key success factors are:

1. Effective leadership by the regional authorities, which draws together all stakeholders in support of a coherent approach, with clear objectives and target outcomes.
2. A strong regional identity with a sound understanding of the region’s strengths and weaknesses.
3. Forging closer links between related sectors, such as hospitality, creative industries and transport to offer a coherent package of activities and to retain the region’s attractiveness to highly skilled young people.
4. Careful targeting of potential customers and raising the customer experience through high quality services.
5. Investment in infrastructure and skills, particularly in relation to broadband, to achieve a step change in the quality of information available to customers, businesses and other stakeholders.

Mechanisms, such as the Structural Funds, already exist to support such strategies but are currently undersubscribed. The Expert Panel believes that greater efforts should be made to promote the role of service innovation within the context of the Structural Funds to achieve the goal of inclusive growth set out in Europe 2020.

By providing a broad-based potential for transformation, services not only influence highly innovative firms, but also reach across the economy to support growing firms and regions behind the technological frontier. In doing so, low-productivity traditional sectors now have the potential to be transformed, and under-developed regions have the chance to build new images of themselves as part of a more innovative Europe. The interactive nature of modern economies means that this is not just a private sector concern. The increasingly blurred boundaries between the public and private sectors mean that service innovation can help local and national governments improve how they deliver public services and make more efficient use of public spending.

²³ As worded in the European Commission document ‘An Integrated Industrial Policy for the Globalisation Era: Putting Competitiveness and Sustainability at Centre Stage, COM(2010) 614: “... The Commission will ... set up a High Level Group on Business Services to examine market gaps, standards and innovation and international trade issues in industries such as logistics, facility management, marketing and advertising (2012) ...

²⁴ Highlighted for instance at a seminar organised by DG Enterprise and industry looking at service innovation in support of sustainable tourism. 22-23 November 2010, in St Vincent, Valle d’Aosta (papers and proceedings)

4. Supporting new globally competitive markets and businesses through service innovation

The future sustainability of the European economy depends on more firms undertaking higher added value activities. Such activities provide more stable employment that is less likely to move to lower cost regions of the world. The on-going blurring of the boundaries between manufacturing and services is helping to drive a shift towards higher value activity as production is integrated into broader service systems. Innovation in transport and logistics, mobility services and environmentally focused manufacturing and infrastructure are all helping to change how the European economy operates. If we want to maintain a strong manufacturing base in Europe, closer interactions between manufacturing and services should be promoted, for the important productivity gains that service innovation can bring to traditional manufacturing sectors, make them more competitive and globalised. The Expert Panel considers that we need to continue to foster the links between the service and manufacturing sectors to improve the value added of products and strengthen European competitiveness.

One consequence of these changes is that more attention will need to be given to users and their demands within service systems²⁵. Markets will become more important sources of knowledge about future customer demands and requirements²⁶. However, in service environments, ideas develop and are disseminated quickly. The Expert Panel therefore recommends the use of light-touch mechanisms to identify and respond to opportunities, and develop EU industrial capability in new emerging areas.

4.1 The European Creative Industries Alliance

As mentioned above, a good example of this kind of activity can be seen in the creative industries sector. Europe has a major trade advantage in high-value branded goods that creatively draw on its rich cultural heritage. Many of Europe's most iconic global firms have a user-focused, design-intensive approach to innovation. Where European firms have lost global market shares, for example, in mobile phone handsets, it is often because of their lack of attention to the user experience in design. This user-focus is becoming more important as newly industrialised economies find it far easier to copy technology than copy heritage. This European advantage should be exploited.

In recognition of this advantage, the Commission will launch a "European Creative Industries Alliance (ECIA)" in the autumn of 2011 to improve the integration of creative services, such as design, with traditional manufacturing sectors to add value and enhance the economic performance and robustness of European industry²⁷. The Alliance will be composed of a policy learning platform bringing together regional and national policy makers and stakeholders representing the creative industries; awareness raising actions to promote innovative creative industries in Europe and raise the political awareness of their specific needs; a Europe-wide online information and guidance service for enterprises in creative industries; and a series of concrete actions for innovation support through vouchers, access to finance, and cluster excellence and cooperation facilitated by public-private partnerships.

The Expert Panel believes that if the *European Creative Industries Alliance* proves successful when evaluated, the model could easily be replicated in other emerging sectors identified by the High Level Group or the European Service Innovation Centre. Also, it is important to establish synergies with the *European*

²⁵ Klepper S and Malerba F., (2010), Demand, innovation and industrial dynamics: an introduction, *Industrial and Corporate Change* 19(5): 1515-1520

²⁶ See Mikko Pohjola: "Markets in service innovation. A conceptual framework for analysing the role of markets in service innovation" mimeo.

²⁷ The European Creative Industry Alliance will bring together the main regional, national and European actors supporting creative industries and representatives from key industrial sectors. The Alliance will spend its € 7.5 Mio budget over three years to support creative industries to improve innovation support, and facilitate access to creative sectors. See The European Creative Industry Alliance. Background note for the attention of the EIPC member, September 2010.

Design Innovation Leadership Board while, at the same time, ensuring clear and distinct identities for both initiatives. The ECIA is to be considered a policy initiative bringing together regional and national policy makers to jointly develop better policies for creative industries, while the European Design Innovation Leadership Board brings together the business community enabling them to articulate their views and needs in relation to the role of design in innovation policy.

Consequently, the Expert Panel also recommends the establishment of an Expert Group for the ECIA representing regional and national policy initiatives in the field of creative industries. Such a Group would benefit and help the Commission and Member States to develop and share a common vision of how creative industries can contribute to modern industrial policy, identifying favourable framework conditions, trends and foresight and links with other sectors to inform policy design with a view to unlocking the competitive and innovative potential of creative industries in the EU. Such an Expert Group would be best managed by the Commission services in order to ensure a balanced and inclusive representation and the necessary political commitment to take forward the Group's recommendations.

4.2 How to encourage service innovation in the future

The EU promotes competitiveness, innovation, and growth through the Competitiveness and Innovation Framework Programme (CIP), which ends in 2013²⁸. Work on the future orientation of a successor programme to CIP has already begun, and the Expert Panel recommends that the programme development process take into account the changing services paradigm and the vital role transformative services will play in achieving the growth goals of Europe 2020. It should emphasise how service innovations contribute to European growth at the local and regional levels by transforming value chains, not only in new sectors but also in traditional manufacturing sectors²⁹. Any possible successor programme should emphasise the role of service innovation in achieving the objectives of the Europe 2020 Strategy and underpin the flagships initiatives, notably the "Innovation Union", the "Digital Agenda" and the "Industrial Policy" flagships, and be resourced accordingly.

The objective of the *European Creative Industries Alliance* and its sister initiative the *European Mobile and Mobility Industries Alliance* is to unlock the potential of service innovations and making them more robust and competitive. These actions will promote internationalisation (export of services), and transnational cluster cooperation in emerging industries thus strengthening the role of service industries in the economy, i.e. they can be considered forerunners for the recommendation for a Service Gazelles Programme under the CIP successor programme. The goal is to support entrepreneurship on the one side, and better business framework conditions on the other so that the potential of service innovation can be unlocked.

The Expert Panel suggests a number of service innovation activities to be deployed under the CIP successor programme in this report. They need to be flexible to respond quickly to changing market conditions, while providing a solid base for long-term service innovation that integrates service and manufacturing activities into new user-focused service systems. Such a programme could also be a driver for more sophisticated R&D by making it more demand- and user-focused. Research and technology remain vital to innovation but need to be seen from a users' perspective within a wider service system, rather than from a technology (push) perspective. Joint innovation activities ensuring strong interaction between manufacturing and service sectors will become one of the top priorities of all existing programmes as well in any other programmes launched in the future.

Instruments such as the ESIC as well as large-scale demonstrators and a Service Gazelles Programme (see below) should be developed in close connection with each other, being complementary and reinforcing the flexibility, speed of implementation, and impact.

²⁸ The Competitiveness and Innovation Programme, CIP consists of three sub-programmes: Entrepreneurship and Innovation Programme, ICT Policy Support Programme; and Intelligent Energy Europe Programme. See <http://ec.europa.eu/cip/>.

²⁹ See 'Background document to the public consultation on a possible successor programme to the Competitiveness and Innovation Framework Programme 2007-2013, EU 2010. A successor programme will focus on achieving the objectives of the Europe 2020 Strategy, and underpin the 'Innovation Union', 'Digital Agenda' and 'Industrial Policy' flagship initiatives.

4.3 Policy to encourage gazelles

One of the most striking findings in current industrial policy research is the extent of the skewed impact of firms on the economy ³⁰. While it used to be thought that encouraging entrepreneurs to start firms was a cost effective driver of innovation and economic development, recent European evidence suggests that most start-ups fail rapidly at considerable social cost. Moreover, most of the firms that remain generate “churn” rather than employment growth (i.e. they survive by displacing similarly marginal firms). ³¹

Policy makers need to consider the implications of this research, which suggests that European policy should place greater emphasis on encouraging firms with high-growth potential ³². However, firms’ high-growth potential lies, not only in the capabilities of individual firms, but also in the wider market environment ³³. Investors and customers, for example, may be risk averse or lack the skills to adopt new ideas or recognise the value of new business models. In this regard, there are two important points to note:

- Many of the fastest growing firms in the US are in smart services and exploit the Internet to reach out to the long tail of marginalised consumers and use it to coordinate outsourced manufacturing and other activity.
- Transformative services themselves play a key role in providing the institutional infrastructure needed to support a high growth environment ³⁴. For example, skilled business angels, VC funds, and accountants and lawyers, with specialist skills in supporting high-growth enterprises, are all important elements of a dynamic business environment ³⁵.

These supporting institutions tend to depend on a large market to maintain a high level of specialisation. The fragmentation of the European market means that the EU lacks the degree of specialisation found in the US. In venture capital, for example, large US VC funds tend to have expertise in a specific sector or area of technology, while many EU funds are generalists. The contribution of specialist skills, deeper pockets, and better links to industry networks, allow US funds to support the firms in their portfolios to grow rapidly and access customers across the US. This is not the case in Europe. As a result, many fast-growing European firms look to expand in the US rather than across the European market to the detriment of European customers.

The Expert Panel believes there is an urgent need for a re-evaluation of the funding environment for “gazelles”, and how to address the cultural barriers to innovative firms expanding rapidly in the Single Market; it recommends that a Service Gazelles Programme be developed to address these issues.

5. Exploiting service innovations to address societal challenges

We have outlined the potential for transformative service innovation to act as a catalyst of EU growth and indicated how this could be enhanced through better targeting and closer coordination of EU policy tools. However, while market frameworks, infrastructure investment and skills will underpin service innovation, research remains a key policy lever to promote innovative capability.

The nature of service innovation – particularly the immediacy of the relationship between supplier and customer – suggests that a new complementary research agenda is needed, which is more problem-fo-

³⁰ Storey, D. J. (1994), *Understanding the Small Business Sector*, London: ITP; Mitusch K and Schimke A (2010) *Gazelles High-Growth Companies* - 2010, University of Karlsruhe (TH), IWW; Coad, A and W. Hölzl (2010) *Firm growth: empirical analysis*, Papers on Economics and Evolution Jena 1002.

³¹ Santarelli E. and Vivarelli M, (2007) *Entrepreneurship and the process of firms’ entry, survival and growth*, *Industrial and Corporate Change* 16 (3): 455-488

³² Santarelli E. and Vivarelli M, (2002) “Is subsidizing entry an optimal policy?” *Industrial and Corporate Change*, 11(1):39-52

³³ This is one of the main findings of the FRIDA FP7 project.

³⁴ NESTA-BVCA (2009) “From Funding Gaps to Thin Markets”, NESTA London.

³⁵ Ibid.

cused and inter-disciplinary. As in traditional research programmes, service innovation emerges from experimentation. However, in a service environment, the success of the innovative solutions depends on the overall user experience and the users' willingness to embrace change. Furthermore, to be economically viable, such solutions typically need to be scalable. Thus, to transform service systems, experimentation has to move to large-scale demonstrators that show how solutions can (or sometimes cannot) be rolled out at the regional and national level with manageable risk.

The Expert Panel therefore welcomes the concept of Innovation Partnerships and the proposal to adopt demonstrator-oriented approaches to societal challenges to speed up innovation and allow demand to be articulated across the traditional organisational "silos" that constrain innovation³⁶. The Innovation Partnerships should be organised around concrete and ambitious targets that address societal challenges that have widespread public and political support.

The Expert Panel believes that the European institutions should seek to reach agreement quickly on how to expand demonstrators to other areas. They will help provide Europe with the infrastructure and service systems it needs to pursue its own wellbeing and act as a platform for developing business opportunities in expanding global markets. The newly launched flagship initiatives under the Europe 2020 Strategy show a clear interest in and a need for understanding the innovation potential of demonstrators.

In the following, we set out how we believe these demonstrators should be developed and identify the areas where a linked demonstrator approach would be worthwhile.

5.1 The demonstrator approach

Innovation takes place in complex conditions where experiments are needed to learn about the technical and market strengths and weaknesses of various options. With service systems there is substantial emphasis on articulating emerging consumer demands, defining standards and working back from user-needs to potential technical solutions. This implies a very different kind of innovation process and different tools for policy support. Demonstrators provide a way of de-risking innovation by providing a staged process in which a range of solutions are initially developed, tested and then selected for further rounds of support³⁷.

In line with the Innovation Partnership approach, demonstrators bring together industry, service providers, research institutions, regulators, and users to share knowledge, contribute practical experience to articulate demands and define possible options. In this respect, demonstrators will need to be closely linked to the collection of evidence on changing user needs and technological options that the Expert Panel suggests should be undertaken in ESIC (cf. Section 4). Demonstrators move from small-scale prototypes, to a smaller number of larger-scale near-market projects. As such, they provide all the benefits of an effective research-procurement policy tool at the national level with European wide roll-out. Given the size of the European market, this should provide the basis for European standards to play an important role in developing global standards, thereby ensuring a level playing field for EU firms in global markets.

From the Expert Panel's perspective, there are a number of important elements, which will contribute to the success of the concept:

- For each societal challenge, there need to be unambiguous, quantifiable objectives and a Programme Board comprising the representatives of established Community funding streams e.g. the Structural Funds and the R&D Framework Programme.

³⁶ The EU "innovation partnerships" scheme brings together EU, national and regional government and industry stakeholders to tackle societal challenges. The scheme was passed in Parliament on the 11th November 2010, and the first partnership on "Active and Healthy Ageing" will be launched in early 2011.

It will act as a learning environment to find the best structure for the scheme. The scheme is part of the European Commission's "Innovation Union flagship initiative", which was announced in October 2010. See: <http://www.europarl.europa.eu/en/pressroom/content/20101110IPR93928/>

³⁷ Demonstrator projects, as innovation management tools for the development of Complex Product Systems (CoPS), arose in aerospace industry as a way of learning about user needs and how they might be addressed by technology, (which in turn fed back into new research requirements). Hobday, M. (1998) Product Complexity, Innovation and Industrial Organisation, Research Policy (26): 689-710. As such they draw on the experiences of Constructive Technology Assessment Groups in the Netherlands.

- For each challenge, a number of demonstrators would be chosen from across the EU offering a range of solutions.
- The demonstrator concept is outcome and user-experience oriented. This requires a thorough analysis of baseline performance against which to judge the success of new approaches.
- Within each demonstrator, there needs to be a clear “owner” of the challenge to lead a consortium of solutions providers, e.g. a municipal authority, with the required infrastructure and client base.
- While the consortium may well comprise organisations from the same Member State as the leader, there needs to be a strong pan-European element, as well as potentially innovative solutions to elicit EU funding.
- An important aim for each challenge theme would be to identify how to strengthen the Single Market framework, e.g. through (interoperable) standards and market expansion.
- The centrality of this approach to a range of Community policy initiatives merits an annual report on progress.

5.2 Proposed demonstrators

Member States are already working closely with the Commission on how to develop the Innovation Partnership and related demonstrators in the field of healthcare and active ageing. The Expert Panel welcomes this development and highlights the importance of the key success factors it has outlined above in the development of the demonstrator approach. The Expert Panel therefore proposes the following additional demonstrators as an early priority. They cut across the three growth areas of Europe 2020 to provide a coherent approach to the wider societal challenges and involve a wide range of stakeholders, industries and technologies.

Demonstrator 1: sustainable communities



Challenge: to promote the greening of industry and the protection of natural resources, through resource efficiency, water and waste management, recycling and life-cycle concepts

The environmental service sector can make a substantial contribution to Europe’s economic and social life by helping green European industries to achieve political targets for environmental improvement and climate change in a cost effective manner³⁸. This transformative power can be developed and tested in a process which leads up to large-scale demonstrators that provide access to Europe wide markets. Currently, the key driver for firms to use traditional environmental services is legal compliance with EU regulations, which are some of the most stringent in the world. Policies to support green industries could therefore reduce those costs. Moreover, the market for such services is expanding as concepts such as carbon footprint, eco-design, life-cycle assessment, etc., become more prominent and other parts of the world improve their environmental standards.

Cities and regions facing similar environmental challenges can be connected through specialised collaboration during the demonstrator process to allow them to exploit the advantages of scale, of reduced costs and improved performance that they could not achieve on their own. Using a staged process, the best performing options can be chosen and supported for scaling up, with firms attracted by the much larger potential markets that are on offer in a coordinated trans-national process. This should be undertaken in ways that comply with the recommendations of the Expert Panel that Member States review their strategies towards the use of Structural Funds. This includes, in particular, the recommendation that they take the opportunity to utilise such funds to develop “smarter” infrastructures and innovation programmes to enable the development of higher value services.

Demonstrators for sustainable communities are thereby identified in the following two areas:

³⁸ “Greening” is often related to the presence of an eco-innovative solution based on an environmental technology; the role of the environmental services is to facilitate and support the implementation of that specific technical solution.

Demonstrator 1A: industrial areas in transition

Challenge: to enhance the competitiveness of heavily industrialised regions, while transforming their environments

Cities and regions across Europe with heavy industries are facing comparable challenges in seeking to improve productivity, develop a broader economic base, while improving the quality of the environment.

This Sustainable Community Demonstrator would be aimed at connecting such heavily industrialised areas in Europe so that experiences can be shared, policy measures validated and appropriate technical and business model solutions developed³⁹. Large industrial complexes, such as in Katowice, can learn from other regions about how to convert to greener production. Similarly, large ports, in areas such as Rotterdam, Hamburg and Antwerp, could intensify their collaboration and use demonstrators to procure new service innovations in port logistics, oil storage, security, civil engineering, and other areas of interest. Such thematic cooperation would also be beneficial in sensitive environments like nuclear power plants, industrially contaminated areas and mining regions. Already some regions, such as the Ruhr Area, comprised of (former) industrial cradles have successfully implemented a move towards a sustainable regional economy, and their expertise could be reused across Europe. Another example is the European project 'UNIC'⁴⁰. UNIC aims at enabling all the European cities and regions, which have gone through an economic transition from a traditional economy with strong "heritage" value and cultural identity to a sustainable innovation economy to anticipate, prevent and address the economic, cultural and social consequences of such transitions. The project brings together local authorities, local stakeholders and local authorities in 9 European cities UNIC is funded under URBACT programme, which is a large EU programme to promote sustainable urban development⁴¹.

Demonstrator 1B: smart cities

Challenge: how to provide citizens, visitors, companies, utilities and municipal authorities with the information they need, when they need it to address urban challenges such as congestion, sustainable energy and employment opportunities, as well as information on access to local amenities and services

All European cities are grappling with the challenges of congestion, ensuring reliable, renewable energy supplies, and meeting the diverse needs of citizens in terms of employment opportunities, social care and healthcare. A number of cities are looking beyond the short-term opportunities afforded by integrated databases and shared services and are considering the development of Internet-based platform approaches to more open information provision. There are considerable opportunities for sharing experience around the concept of "smart cities" and significant market opportunities in global markets as urbanisation is increasing in the developing as well as developed world.

Demonstrator 2: creating dynamic regions

Challenge: to improve the standard of living of the poorer, remote regions in Europe, with particular reference to smarter, sustainable tourism

Some of the significant benefits of service innovations are that they lower the barriers to access to markets and reduce the costs of starting private businesses. For instance, service innovation helps rural and

³⁹ Heavy industry includes large ports, industrial complexes, energy production and storage, nuclear power plants, and on-soil and off-soil mining, which often contain deprived & industrially contaminated areas.

⁴⁰ <http://urbact.eu/en/projects/innovation-creativity/unic/homepage/>

⁴¹ http://urbact.eu/fileadmin/general_library/TRIBUNEweb_.pdf

remote regions to develop by focusing on developing and integrating local existing and new services in tourism.

Tourism and the experience economy are particularly relevant in remote geographic areas with natural assets, and many European regions recognise tourism's role in regenerating rural areas. Tourism also provides a large amount of employment for EU citizens at the margins of the economy. It is therefore a key "inclusive growth" sector. Tourism plays an important role in the European economy. It comprises 1.8 million enterprises, many of them being small and medium sized businesses. Tourism caters for 5.2% of employment and contributes to more than 5% of European GDP. The tourism sector employs both skilled and unskilled labour. It is a sector where people with little education often take their first job and it provides opportunities for self-employed people ⁴².

Regional organisations such as the Scottish Tourism Innovation Group ⁴³ have demonstrated the benefits to the regional economy that can be achieved. By setting clear and achievable objectives at regional level, based on mapping the strengths of the region, stimulating the formation of clusters and collaboration between different activities within the region, and improving communication and interaction between the various regional stakeholders, the touristic assets of a region can be much better exploited. This, in turn, secures higher revenues and creates new jobs and services.

The identification of new trends is important to any tourist destination and "green tourism" and medical or wellbeing tourism are important emerging trends. Travel and tourism can be seen as key to stimulating sustainable growth, and, as such, it is a good example of a sector that contributes to all three growth priorities of the Europe 2020 Strategy. This has been demonstrated at numerous events, including a service innovation seminar held in Valle d'Aosta ⁴⁴ in November 2010.

Demonstrator 3: sustainable coordinated transport



Challenge: to promote more sustainable mobility and reduce the cost of congestion

Parts of Europe are among the most congested in the world and transport accounts for around 30% of European carbon emissions. While European research programmes have sought to ameliorate these problems, their technical focus has not so far solved the problem. Two broad problems currently stand out as needing effective solutions:

1. Reducing vehicle carbon emissions. There are many potential solutions, such as deploying more efficient internal combustion engines, electrification of transport through battery, plug-in hybrid and fuel cell electric vehicles. However, their implementation has been constrained by a lack of understanding of how they would fit into an effective service delivery system.
2. Improving the efficiency and predictability of the transport system by better coordination between different modes of transport. Again, technical solutions seem to exist which focus on providing real time information to travellers on congestion and potential routes to follow, or the development of technologies for traffic management and active safety.

Success in both areas will ultimately depend on transformation and integration of novel service systems. If battery vehicles are the ultimate solution, they will need to be enabled by the appropriate provision of public and private recharging points and smart grids. If hydrogen fuel cell powered vehicles are found to be most effective they will require an extensive new green hydrogen infrastructure. Similarly, any visions of travellers using a mix of travel modes with the minimum of disruption, or of logistics services offering reliable just-in-time delivery, will require interconnected vehicles and vehicle-to-vehicle and vehicle-to-infrastructure communications.

⁴² The recent Commission's Communication "Europe, the world's No 1 tourist destination – a new political framework for tourism in Europe" stressed that innovation needs to be boosted so that the tourism sector and its enterprises can adapt to new trends in consumer behaviour and overcome fixed patterns in the sector.

⁴³ http://www.visitscotland.org/what_we_do/partnership_initiatives/tourism_initiatives/tourism_innovation_group.aspx

⁴⁴ The event 'How can service innovations support sustainable tourism in rural regions', 22-23 November 2010, Saint Vincent, Valle D'Aosta, Italy

The Expert Panel understands that the service systems in support of low and ultra-low carbon vehicles are developing in Member States, particularly in those where automotive manufacture is important. However, intelligent mobility represents a major cross-sectoral challenge to the research and business community in all Member States. It will require advances not only in research and technology but also in interoperable standards and understanding of traveller needs and the barriers to potentially innovative solutions. Furthermore, the Expert Panel believes that the benefits that can be derived from transforming logistics, tourism, and public and private transport systems through the power of information merit the early establishment of linked demonstrators in this field.

6. Conclusions and Recommendations

The Europe 2020 Strategy analysed the challenges facing Europe over the next decade and identified the need to bring a new dynamic into the European economy in the form of smarter, sustainable and inclusive growth. The Commission's seven flagship initiatives are providing the EU with a wide ranging response. The Expert Panel was charged with considering how services and service innovation could help achieve the Europe 2020 goals.

Our own analysis and case studies indicate that leading European manufacturers are responding to the challenge of global competition by not only improving the design, functionality and performance of their products, but also moving to user-centric and service-oriented business models, to better meet the needs of customers. At the same time, service providers are working closely with manufacturers to improve the reliability and performance of the systems behind their service offerings. The result has been a closer working relationship, indeed a blurring of the traditional divide between manufacturing and services.

The development of technology has brought about fundamental changes in the ability of businesses to engage directly with the customer anytime, anywhere, which is revolutionising value chains and business models. It is also providing a step change in the information available which is revolutionising business processes. Technology will continue to bring about further paradigm shifts as the world economy needs to move to low carbon consumption and adjust to an ageing population, while consumers will continue to demand a better experience and performance from products and services alike.

However, the thrust of this report is that a focus on technology itself is not enough. The move from traditional models of healthcare to assisted living, from national power grids to more distributed sources of renewable energy, from petroleum based transport to battery powered or hydrogen fuel cells, or the development of intelligent traffic management requires transformation of the entire system, which provides customers with the improved experience they have come to expect. The Expert Panel believes that successful transformation can only be achieved through a holistic approach, viewed through the lens of the customer, in short a service orientation.

As noted above, business is becoming increasingly aware of the way in which service elements and service innovation transforms value chains and their own position within them. The real insight of this report is that, while considerable focus has rightly been given to creating a Single Market for services, industrial and innovation policy at the European, national and regional level needs to be similarly geared towards services. Our recommendations are therefore aimed at strengthening the policy framework in five main areas.

RECOMMENDATIONS

1 Raise awareness of the transformative potential of service innovation and its contribution to EU competitiveness

The Expert Panel recognises the increasing attention given to the importance of services to the EU economy. However, one of the difficulties experienced in preparing this report was the fragmented nature of information related to service innovation within the EU, other than that being developed under the aegis of the EPISIS INNO-Net⁴⁵. The Expert Panel notes the valuable knowledge and expertise provided by the Institute for Prospective Technological Studies in Seville, the International Institute for Applied Systems Analysis near Vienna and other observatories in the field of R&D and its impact on business performance, and the value this brings to both policy debate and EU firms.

The Expert Panel recommends that:

- The European Commission develop a European Service Innovation Centre (ESIC) to strengthen the links between policy makers, business and academics. The ESIC can help raise awareness of new developments and emerging opportunities related to service innovation.
- The ESIC act as a central hub of expertise, and collaborate closely with IPTS in Seville, IIASA near Vienna, universities, think tanks, industry and knowledge intensive service sector associations, to provide authoritative analyses, sectoral and foresight reports, and evaluations of support programmes.
- The findings of the ESIC inform the thinking of the High Level Group on Business Services, which the Commission is proposing to establish.

2 Strengthen political leadership at the European, national and regional levels

As this report has demonstrated, the contribution which services can bring to the Europe 2020 agenda is wide ranging and, in many cases, the nature of the challenge is complex. This requires policy coordination of a high order. The Expert Panel therefore welcomes the Commission's proposal to establish a High Level Group to draw together this business service perspective, give impetus to the single market for services and ensure that the framework conditions are in place to generate the same dynamism for services as has been achieved in product markets. The Expert Panel also considers that, at the regional level, greater emphasis could be given in strategic planning to the role that services can bring to economic growth.

The Expert Panel recommends that:

- The High Level Group provide the political leadership that is necessary to promote a service perspective in policy making and take forward the recommendations of this report.
- Regional innovation strategies give particular weight to the role which services and service innovation might play in contributing to growth and economic development.
- Where appropriate, Member States review their strategies towards the use of Structural Funds and, in particular, develop measureable outcomes in relation to supporting innovative services. Such an approach could lead to their active participation in the Innovation Partnerships and large-scale demonstrator programmes set out in this report.

⁴⁵ The EPISIS project aims to facilitate transnational cooperation between policy-makers and innovation agencies in the field of services innovation through parallel policy, strategic and operational level activities. The project offers an open platform for discussion on policy recommendations and policy approaches in support of services innovation and organises three policy-oriented international conferences. See <http://www.proinno-europe.eu/episis/page/project-overview>

3 Build new competitive business from service innovation and improve the agility of policy making to do so

The foresight activities of the ESIC should help identify new opportunities where an early intervention could effectively be used to explore emerging areas, for example, by the rapid development of networks or communities of interest. To gain a competitive advantage, it is imperative that foresight be better integrated with other policy tools at a European scale and, where relevant, such communities could offer new and innovative solutions to societal challenges, i.e., feed into the Innovation Partnership/demonstrator programmes.

The Expert Panel recommends that:

- The European Commission adopt established mechanisms for encouraging the development of the new innovative services. The European Creative Industries Alliance may provide such a model.
- Under the Alliance, the Commission set up an Expert Group to help the Commission and Member States develop and share a common vision of how creative industries can contribute to modern industrial policy, to monitor the Alliance's progress, and to liaise with the High Level Group on Business Services.

4 Develop dedicated programmes in support of innovative services

The networked structure of many service systems provides opportunities for innovative SMEs to grow rapidly and contribute to a dynamic, entrepreneurial Europe across all sectors. However, the growth of such firms is often constrained by cultural as well as non-tariff barriers to trade within the EU, resulting in ambitious firms often looking first to the USA for opportunities. Rigorous application of the Services Directive will help reduce barriers, and a strengthening of the European venture capital market will open opportunities to firms with the potential to grow rapidly. However, the Expert Panel considers that the asymmetries of information which exist in emerging innovative service markets, combined with the cultural barriers experienced by SMEs within the EU, constitute a significant market failure and barrier to growth.

The Expert Panel recommends that:

- The European Commission develop a Service Gazelles Programme to support high impact gazelles within the EU.
- The European Commission implement initiatives to foster and strengthen joint innovative interactions between service and manufacturing companies.

5 Promote the application of service innovation to meet societal challenges

Our report has given particular focus to the need for adopting systemic approaches to service delivery and to the importance of linked demonstrators as a vehicle for achieving complex service transformation. The Expert Panel therefore supports the concept of Innovation Partnerships and the use of large-scale demonstrators to tackle the societal challenges set out in the Europe 2020 Strategy Flagship "Innovation Union"⁴⁶. They represent a powerful means for de-risking the development and scale-up of novel services systems, encouraging engagement with stakeholders and users, sharing experience across Europe, identifying clusters of expertise and opportunities for partnership, as well as developing European standards, diffusing technology, and connecting innovation with procurement. In doing so, they can help fulfil the Commission's objective of increasing the returns from research.

The Expert Panel recommends that:

- The European Commission set out its model for Innovation Partnerships in relation to its chosen pilot of assisted living at the earliest opportunity.
- Urgent consideration be given by the European institutions to the selection criteria and governance

⁴⁶ http://ec.europa.eu/research/innovation-union/index_en.cfm

of Innovation Partnerships/demonstrators with a view to adopting this policy tool as a key driver of innovation and industrial policy in the EU.

- The next R&D Framework Programme (FP8) give due consideration to the technologies that underpin the “smarter”, sustainable systems which enable firms to develop responsive real time services in sectors as diverse as transport and logistics, construction and facilities management, energy distribution, telecommunications and financial services.

Annex 1

Members of the Expert Panel on Service Innovation in the EU



Allan Mayo (Chairperson)

Allan Mayo is Head of the UK's Department for Business Services Policy Unit. His team was responsible for the publication of the Government report on "Supporting Innovation in Services" in 2008 and for a report on "Professional and Business Services: A 2020 Vision for Growth" in 2010. He has a long standing interest in the EU and international policy arena, spending five years co-ordinating UK policy on European research and participating in the CREST senior officials committee in Brussels. He ran the Government's International Technology Service, opening technology collaboration with China and Russia, and he is currently participating in the EPISIS project on service policy. After working as an economist in competition agencies, Allan has focused on Innovation Policy, including advising on the establishment of the UK's Technology Strategy Board and developing its strategy. He has also been at the forefront of thinking on how Government and its agencies can engage with business through the adoption of Web 2.0 techniques, road mapping, and the Semantic Web.



Anna-Maija Rautiainen

Anna-Maija Rautiainen is the Project Coordinator of the EPISIS project and has worked in Tekes, Finnish Funding Agency for Technology and Innovations, since 2004. Her duties include, for example, innovation research, impact analysis, innovation policy issues and financing of young innovative growth companies in the service field. Prior to Tekes, Anna-Maija Rautiainen worked for the Finnish Ministry of Trade and Industry



Eurico Correia Neves

Eurico Neves is CO and Founder of INNOVA Europe S.A.R.L., Brussels, and CEO and Founder of INOVA+ S.A., Portugal, two leading firms in innovation studies, research management and technology transfer. He has an MSc in Engineering from the University of Porto (1989) and a Master in Marketing from IEP / ESADE (1999). Since July 2007, he has been the Portuguese representative in the Business Chamber of the Enterprise Policy Group (EPG) of the European Commission, an advisory board to Vice President Antonio Tajani.



Hans Rijckenberg

Hans Rijckenberg holds an engineering degree in Urban and Regional Planning from Delft University of Technology. Since 1991, the European Commission has invited him to partake in multiple projects and assignments. Between August 2007 and October 2008 he was appointed Secretary-General of ProTon Europe. With over twenty years of experience in knowledge transfer services, innovation policy evaluation and regional economic development, Mr Rijckenberg is a recognised international expert. His work has yielded multiple publications and presentations. He speaks five European languages (four fluently) and understands another twelve languages.



Hasan Bakhshi

Hasan Bakhshi is Director, Creative Industries at the National Endowment for Science, Technology and the Arts (NESTA) in London. NESTA is an independent body with a mission to make the UK more innovative. It invests in early stage companies, informs policy and delivers practical programmes that inspire others to solve big challenges of the future. It does so in three ways: by making seed corn investments in early stage innovative ventures, by trialling new innovation programmes, and by conducting policy relevant research. Hasan Bakhshi is also research fellow at the ARC Centre for Excellence in Creative Industries and Innovation (CCI) at the Queensland University of Technology and honorary visiting professor, City University. Prior to joining NESTA, Mr Bakhshi was senior vice president at the investment bank Lehman Brothers and held various economic and policy positions at the Bank of England. He has published widely in areas spanning macroeconomic policy, technological progress and the economics of the creative industries.



Irene Martinsson

Dr. Irene Martinsson is Senior Programme Manager at VINNOVA and responsible for Innovations in the Service Society. Her duties include development of new program activities and policies for Service Innovation. She is Vinnova's Project Manager in EPISIS (European Policies and Instruments to Support Innovation in Services). Prior to VINNOVA, she was Assistant Professor in Business Administration at Stockholm University and also worked for the Swedish Ministry of Industry. VINNOVA (The Swedish Governmental Agency for Innovation Systems) is a State authority that aims to promote growth and prosperity throughout Sweden. VINNOVA's area of responsibility comprises innovations linked to research and development.



Jette Nøhr

Ms Jette Nøhr is a Senior Adviser at the Federation of Danish Knowledge Advisors within the Confederation of Danish Industries. The Confederation of Danish Industries is the largest employer organisation in Denmark covering both manufacturing industries and service industries. For the past five years, Ms Nøhr has focused on and worked intensively with innovation in services both at the practical level in relation to member companies and at a political level taking part in the development of service innovation policies in Denmark. She has been the coordinator of a 2½-year programme co-financed by the Danish Ministry of Science, Technology and Innovation promoting Danish service companies' participation in research and innovation projects within the EU. She has been member of several working groups on service innovation under the Danish Ministry of Science, Technology and Innovation as well as member of the KISPLATFORM's Horizontal Steering Group of Innova Europe as an external expert.



Gertraud Leimueller

Gertraud Leimueller is president of the Austrian creative industries platform *creativ wirtschaft austria* (www.creativwirtschaft.at) since 2006. She is an innovation expert and runs winnovation (www.winnovation.at), a research and consultancy firm specialised in open innovation processes. Mrs. Leimueller studied at Harvard University, where she earned a Masters Degree in Public Administration. She then studied at MIT and at the University of Vienna, where she got a Ph.D. in Science. *creativ wirtschaft austria* collaborates closely with the Austrian Federal Ministry of Economic, Family and Youth on the development and evaluation of new innovation policies and instruments especially for the growing creative industries sector. For instance, it invented the internationally recognised skill and network building format "choch 3" for young entrepreneurs. *creativ wirtschaft austria* was founded in 2003/04 and is located in the Federal Chamber of Commerce.



Dr. Karen Böhme

As one of Germany's leading project management organisations Project Management Jülich (PtJ) is a partner for researchers, industry representatives and policy makers. Within PtJ, Dr. Karen Böhme is responsible for strategic planning, focusing on new approaches in technology transfer and services. A biologist by training, she has sound experience in biotechnological research in SMEs. After spending two years at I.N.R.A., France, she joined PtJ's scientific staff in 2006. With capacities in research and innovation management, Dr. Böhme helps contractors at federal and federal state level and in the European Commission to realise their research targets. Jülich (PtJ) serves as an important interface between partners - to make Germany a competitive research and innovation location in a common European Research Area. Part of Dr. Böhme's tasks is maintaining a close interaction with national policy makers. She is responsible for the European Activities within the Department Technology Transfer as well as part of the team managing German Federal Initiatives in Technology Transfer (SIGNO). Her tasks also include coordination and management of the different activities within programmes, the strategic development as well as the direct guidance and support of applicants.



Laura Dingwall

Ms Dingwall has worked on the development of the Scottish Highlands & Islands Innovation System for 8-10 years. This has involved building knowledge infrastructure, innovation support programmes for businesses and identifying strategic partners to accelerate the pace and growth rate of innovation. Her current role is to increase the number and performance of high growth businesses in the Highlands & Islands of Scotland. Nationally, she works with the Scottish Government to develop new innovation policy throughout Scotland. Testament to this is a good range of examples where innovation programmes

developed in the Highlands & Islands have been implemented in other regions of Scotland and across the UK. Ms Dingwall has experience in working with EU partners to test new models of innovation and entrepreneurship support and works internationally on a Business Growth Programme with the Massachusetts Institute of Technology, MIT www.hie.co.uk/innovation



Laurence Page Jeanneney

During her career, Dr Laurence Page Jeanneney has worked in many different french public or private institutions. Since 1998, she is a chair professor at the CNAM, a french university dedicated to life-long higher education and technological research. She currently works for Euromed Innovation Network and Sophia Antipolis foundations. In the Renault group, she has been responsible for mobility services, then for a decade, she was head of the CNAM. She also has been member of the Council for the 5th European Framework Programme for R&D.



Lidia Avadanei

Lidia Avadanei is a development innovation expert consultant at Creative and Innovation Business Incubation Center from Romania. This is a NGO that supplies consultancy services to SMEs and local administration to find the best solutions for economic and social development. Their beneficiaries receive the necessary knowledge and instruments to make use of human and raw materials, produce incomes and jobs and increase added value. The innovation instruments used include studies and research, portfolio creation and development, assistance in the projects' development and implementation. The organisation organises training courses for SME employees and the local administration responsible for applying the strategies and projects.



Peter Wolfmeyer

Following a career in banking and empirical political/social economic research, Peter Wolfmeyer joined ZENIT in 1986 as a Senior Consultant. In early 1994 he became Managing Director. He specializes in strategic and financial consulting, in particular federal, national and EU funding, and policy consulting for the European Commission, regional and national governments (SME, innovation, technology, financing). He established the Euro Info Centre at ZENIT, as well as the Innovation Relay Centre and NRW.Europa, the Enterprise Europe Network node for North Rhine-Westphalia.



Stefano Pileri

Stefano Pileri is an expert on fixed and mobile telecommunication sector with extensive experience, also at international level, on technology, networks, management systems, engineering, planning, marketing, internet services, media, research and innovation. He is the President of Confindustria Innovative and Technological Services. The federation, which is organised in 51 industry associations and 62 local organisations, represents 17,000 companies employing 600,000 workers. The main sectors represented are telecommunications - information technology, radio-television, Internet and satellite services - consulting and training - advertising, public relations and marketing - engineering - quality and certification - research and surveys - integrated services and facility management. The purpose of the federation is to represent, assist and defend the interests of the sector in relation to all technical/economic, social, and cultural issues either on a national, European, and international level.



Thorsten Posselt

Professor Thorsten Posselt, PhD (Economics and Management) is the director of the Fraunhofer Center for Central and Eastern Europe (MOEZ). He is professor of innovation management and innovation economics at the Faculty of Business and Economics at the University of Leipzig as well as professor of Service Management at the University of Wuppertal. He has consulted various companies and is active in executive teaching with a particular focus on service management and innovation. The Fraunhofer Center for Central and Eastern Europe (MOEZ) is the strategic partner of industry, research, and politics for networking and collaborations with policy makers in Central and Eastern European markets. It is an institution in the Fraunhofer-Gesellschaft, Europe's leading organisation for applied research.



Ton Engbersen

Ton Engbersen received his EE in Eindhoven, Netherlands in 1978 and his PhD from the ETH-Zurich in 1983. Since 1983, he has worked at the IBM Research Laboratories in Zurich, Switzerland. He has held a series of management positions in IBM Research since 1987 and became responsible for Innovation with IBM Services clients in Europe in 2007. IBM already created its IT outsourcing business in the early 1990s and is currently one of the largest IT service providers. In IBM Research there is a complete track of service research which, amongst other business results, led to a topic in the 2009 IBM Research Global Technology Outlook.



Tor Mühlbradt

Tor Mühlbradt is special advisor at Innovation Norway in Oslo. He is an MSc and a Master of Management. He has 18 years of international experience from the private sector in engineering, technology transfer and consulting. He joined Innovation Norway in 1996 where he has been responsible for R&D contracts schemes and entrepreneurship, developing cluster programmes and knowledge transfer instruments. He has spent three years as trade commissioner for Norway in Canada. Currently he is responsible for developing service innovation instruments. Innovation Norway's objective is to promote private and socio-economic profitable business development throughout the country and to release the commercial opportunities of the districts and regions by encouraging innovation, internationalisation and image building. The state owned company employs more than 800 people, and has offices in all the Norwegian counties and in more than 30 countries worldwide. The head office is situated in Oslo.



Václav Suchý

Václav Suchý is a senior manager of the Technology Centre ASCR in Prague in the Czech Republic. His current activities are mainly associated with the Enterprise Europe Network aimed at stimulation and support of national SMEs. He also specialises in aspects of intellectual property rights (IPR) protection, with special reference to innovative companies. Technology Centre ASCR is the National Information Centre for European Research. The centre also performs a range of analytical and perspective studies in RTD and is active in transnational technology transfer. Technology Centre ASCR also acts as a national coordinator of the Enterprise Europe Network in the Czech Republic.



Vanja Rangus

Mrs. Rangus was the main initiator of entrepreneurial environment creation as the head of the Department for Economic Development and Tourism in Ljubljana in Slovenia for more than 13 years. She has played a role in a number of projects such as setting up Technology Park Ljubljana (8 Mio € grants from structural fund), the development of Small Business Support Centre of Ljubljana, coordination of the National System of Innovation; and development of several new schemes for SMEs, such as the Ljubljana Guarantee Fund. Currently, Mrs. Rangus is an independent expert in the innovation field and she is a member of a number of boards at national and international level including the Innovating Regions of Europe - IRE Communities of Practice - Steering Group, Board of Directors TII Network, and Board of Competitiveness, National Governmental Office for Development - 8th Group for Business and Financial Environment.



Wil Janssen

Wil Janssen studied computing science and a minor in social sciences at the Eindhoven University of Technology. He graduated cum laude in 1990. In 1994 he obtained his PhD from the University of Twente. After a short stay at the University of Oldenburg he joined the Telematica Instituut in 1996. Wil Janssen combines research and business development in the field of open service innovation, e-business and Internet development. He is responsible for the networked enterprises group at Novay, a public-private partnership aiming at supporting enterprises in ICT driven innovation. He was responsible for the development of the largest service innovation research programme in the Netherlands, *Service innovation - people driven, ICT empowered*.



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