Over the past few years, the concept of Smart Specialisation has been diffused at surprisingly rapid pace among European regions. The latest economic crises, in combination with demographic challenges, climate changes and increased global competition, have increased European attention to research, innovation and entrepreneurship. To implement the strategy Europe 2020 for smart, sustainable and inclusive growth Smart Specialisation strategies were introduced as a way to increase efficiency in research and innovation investments by integrating policy areas, applying a broad definition of innovations and stimulating collaboration - between regions, sectors and levels. In this issue of Nordregio News, we make an effort to discover what Smart Specialisation is all about, and to understand the concept from a Nordic perspective.

Implementing a New Policy Concept - Smart Specialisation

With the development of Research and Innovation Strategies for Smart Specialisation (RIS3) expected to be an ex-ante condition in the new Structural Funds Programmes; the concept has achieved great attention at the national and regional levels, particularly among EU member states.

In the first article What is Smart Specialisation?, Inger Midtkandal and Jens Sørvik, from the S3 Platform in Seville, explore the concept and the context in which it has evolved. They argue that Smart Specialisation builds on accumulated knowledge from earlier programmes, but that some alterations, including strategic processes
and stakeholder involvement, are needed to increase efficiency in its implementation. The S3 Platform has been established by the European Commission to support regions in their processes to develop RIS3-strategies. It provides various types of services, including information, assessment tools, workshops and other events.

One of the over 100 member regions of the S3 Platform in Seville is the Finnish Lahti region. This is a region that was hit hard by the decline in trade with the Soviet Union during the early 1990’s. It is also a region with a low level of education and scientific research, contributing to a slow economic development. In the second article, *Towards Smart Specialisation - The Lahti Region*, Vesa Harmakorpi and Tomi Turu present how the region has attempted to turn the situation around. Even if the concept as such had not yet been diffused, the Lahti region started to implement Smart Specialisation to develop a regional profile and to initiate more efficient economic development. As a consequence of this, regional bodies have prioritised three top areas of expertise, based on regional strengths; environment/clean tech, design and practice-based innovation. The three areas will be combined in what is described as a ‘meta platform’.

Finally, I have given some personal reflections on Smart Specialisation in my article *The Rapid Diffusion of a New Policy Concept*, based on my encounters with the concept and a recent Nordregio study (link) on its early implementation in regional policy in the Nordic countries. The study was commissioned by one of the Nordic Working Groups, initiated by the Nordic Council of Ministers. It is clear that the concept has received the greatest attention in EU member states, but that the national approaches also vary between Sweden, Denmark and Finland. The study indicates that there are only a few regions that have started processes to develop specific RIS3. Still, numerous Nordic regions are already implementing many of the elements and policy tools associated with a successful strategy for Smart Specialisation, even if the concept has not been applied. A final version of the study will be presented in December 2012.

We hope you enjoy reading Nordregio News!

Maria Lindqvist
Senior Research Fellow
and the Editorial Board of Nordregio News
What is Smart Specialisation?

By Inger Midtkandal and Jens Sörvik

Currently there are ongoing discussions and negotiations between the European Commission and EU member states over the inclusion of an ex ante conditionality of a smart specialisation strategy in the next programming period of the Cohesion Funds. This raises questions concerning what is a smart specialisation strategy and how it differs from the strategies already in place.

Briefly, Smart Specialisation or RIS3 (Research and Innovation strategies for Smart Specialisation) is a strategic approach to economic development through targeted support for research and innovation. It involves a process of developing a vision, identifying the place-based areas of greatest strategic potential, developing multi-stakeholder governance mechanisms, setting strategic priorities and using smart policies to maximize the knowledge-based development potential of a region, regardless of whether it is strong or weak, high-tech or low-tech.

Where does Smart Specialisation come from?

The intellectual origins of the concept can be traced to a number of complementary sources. It builds partly on the work undertaken by Dominic Foray and the Knowledge for Growth expert group in the framework of the European Research Area (ERA). This group explored why Europe was lagging behind the U.S. in competitiveness with a particular focus on research and development (R&D) intensity and dissemination of new technologies to explain growth differentials. The group identified that research investment in Europe was overly fragmented, lacking in co-ordination of research and innovation (R&I) investment between stakeholders, and lacking critical mass. It noted a clear ‘me-too’ syndrome in that regions made investments in areas that were too similar and fashionable, such as information and communication technologies (ICT), nano- and bio-technologies. Its recommendation was to support structural change and enable the emergence of new activity sectors or industries by investing in R&I in areas of strategic potential in each of Europe’s regions, acknowledging that these differ with respect to areas of strength and potential. Research and innovation strategies ought therefore to vary with regional conditions; for example, in some regions it would make more sense to invest in basic research in new and emerging technologies and in others in more applied areas or practice-based innovation. Furthermore, regions should bring an outward-looking perspective to their strategies, to identify their niches and align their policies with other actors.
The policy context
The European Commission’s Cohesion Policy aims to reduce differences between regions in Europe and to ensure growth across Europe. Structural Funds are among the main tools to implement the policy and it is within this framework that Smart Specialisation was introduced.

In the present funding period, the average Cohesion Fund spending on R&I across Europe as a whole is 25%. In the ongoing discussions around the design for the forthcoming programming period (2014–2020), it is suggested that within developed and transition regions, 80% of investments should be channelled through energy efficiency, renewables, competitiveness of SMEs and R&I. In less-developed regions, this target is 50%. At the same time, to receive funding from the European Regional Development Fund (ERDF), a Research and Innovation strategy for Smart Specialisation (RIS3) must be developed. For many regions in Europe, more efficient use and management of the structural funds is a crucial factor to overcome the economic crisis, reinforce their capacities and create well-being for their citizens. The RIS3 does not equal the Operational Programme for the implementation of the funding, but is a strategic framework that should guide and align European, national, regional and private investments in the region or member states.

The ideas around Smart Specialisation are well in line with the Commission’s overall growth strategy, EU 2020, and its response to the ongoing economic crisis. These include a focus on identifying niche areas of competitive strength, solving major societal challenges (bringing in a demand-driven dimension), innovation partnerships emphasizing greater co-ordination between different societal stakeholders and aligning resources and strategies between private and public actors of different governance levels. Smart specialisation was also found to be an appropriate strategy to counteract EU R&D investment being amassed in a few northern regions and as a way for southern regions to find their strengths, develop their innovation potential and access these funds.

Breaking with and building on the past
The concept of Smart Specialisation builds on the accumulated knowledge from working with Regional Innovation Strategies (RIS and RITTS). This indicates that it is a fruitful concept, but some alterations are needed. In addition to the challenges identified by Foray and his group, which have also been recognized by the practitioners in these processes, it has been observed that in many regions the process was driven by external consultants rather than regional stakeholders, which created problems for appropriation and engagement. Furthermore, there was too strong a focus on technology supply and R&D, which led to a failure to recognize other important areas for innovation, such as demand stimulation, market access, social and service
innovation, and calls for greater integration of policies. 

Furthermore, in previous strategies, there was a lack of governance structures incorporating entrepreneurs or an entrepreneurial viewpoint in the development, priority setting and implementation of the strategy. In the RIS3 strategy, the bottom-up perspective is heavily emphasized and although it is a multi-level approach, there is a re-emphasis on the regional ownership of the process.

Stakeholder involvement in this sense must mean much more than just consultation in the traditional manner in which stakeholders have been involved in the Nordic countries. It also means that the traditional nodes of power must be reconsidered and even expanded, because they may form a relational lock-in situation obscuring future potential, which would need public support and encouragement.

A summary of the six steps in the RIS3 Guide

The resulting RIS3 is an approach that emphasizes each region’s uniqueness. The path to RIS3 is presented nicely through six steps in the RIS3 Guide. The steps include an analytical, outward-looking phase, a sound and inclusive governance structure, the creation of a vision, goal and priority setting, implementation of a tailor-made and capacity-building toolbox and an integrated sound monitoring and evaluation system.

It must be said that most probably none of the regions start from scratch when developing their Research and Innovation Strategy for Smart Specialisation (RIS3). All regions with some kind of institutional framework will have experiences, both good and bad, from which to learn and depart.

The S3 Platform

The European Commission launched the Strategies for Smart Specialisation Platform (S3 Platform) in June 2011 to provide professional advice to EU member states and regions for the design of their Research and Innovation strategies for smart specialisation.

The Platform is an in-house service of the Commission, located at the Institute for Prospective Technological Studies (IPTS) in Seville, which is one of seven institutions that form part of the DG Joint Research Centre (JRC). It is overseen by a steering team consisting of ten Directorates General and with input from a Mirror Group of high-level experts and network representatives. The platform was located at JRC-IPTS because the institute was involved in the process at an early stage and arranged workshops (including the one where smart specialisation was mentioned for the first time) involving academic experts and practitioners conducting pre-studies and preparing an EC communication on the topic.

The S3 Platform both assists in developing policies and methodology and functions as a learning community. It is an arena where regions and member states meet each other, academic experts, Com-
mission staff and others to discuss, share experiences, jointly develop understanding of policies/concepts and assist their evolution. The work of the platform is developed according to the needs of the regions and member states. By November 2012, over 100 regions and two member states have joined the platform, taken part in the learning community and have received access to organized workshops and events. So far, four Peer Review Workshops have been held in 2012 and four more are in the planning before the summer of 2013. Skåne (Sweden) and Satakunta (Finland) have been subject to peer review, and Västra Götaland (Sweden) and Pohjanmaa/Ostrobothnia (Finland) have participated as critical friends. Pohjanmaa will host a planned workshop in May 2013 in the city of Vaasa. Forthcoming are also thematic workshops on SMEs in Smart Specialisation, the roles of universities, and a workshop on indicators in RIS3.

Future developments
Smart Specialisation as an approach has attracted much attention over the past two years. In addition to the Commission, also independent academics and institutions such as the World Bank and the OECD are conducting work on the topic. OECD is about to finalize a larger project on the topic in which countries outside of Europe also participate.

This attention is further enhanced by the strong likelihood of a condition concerning Cohesion Funds and RIS3s. The indications are that no operational programme will be assessed without a RIS3 being in place or in process. At the same time, we have few good examples of appropriate RIS3s, because these are still in the process of being developed. Policy and practice can be said to be ahead of theory in this case and the various dimensions and challenges of Smart Specialisation are still under exploration.

IPTS
The Institute for Prospective Technological Studies (IPTS) is one of seven institutions that form part of the DG Joint Research Centre. The mission of IPTS is to provide customer-driven support for the EU policy-making process by developing science-based responses to policy challenges that have both a socio-economic as well as a scientific/technological dimension. The fact that the S3 Platform is part of a research institute allows the staff to initiate and participate in high-quality research projects to inform strategy formation and policy-making.
Towards Smart Specialisation - The Lahti Region

By Vesa Harmaakorpi and Tomi Tura

The Lahti Region was hit hard by the collapse of trade to the Soviet Union at the beginning of the 1990s. Until then a vigorous industrial region, it soon fell into decline and was troubled by the disintegration of business life. Growth was pursued through a cluster strategy; however, this was felt to restrict and isolate the activities too much. After tackling the issue of its diffuse innovation environment, the region is now one of the fastest growing in Finland. One of the main drivers of this change has been a strategic approach that could be characterised as Smart Specialisation.

Declining industrial region and low level of R&D input
Lahti is the largest Finnish region in terms of number of inhabitants. It has no university of its own, which is clearly reflected in the low level of education relative to national standards, and in part explains its low level of scientific research. Research & Development (R&D) input in the Lahti region is scarce, amounting to only approximately 250 euros/resident, in contrast to 3300 euros/resident in the Oulu region where R&D input is the highest in the country. The low level of R&D activity is one of the main reasons for the region’s slow development.

The starting point for Lahti was its strong industrial background, mainly in traditional industries. Although the city region of Lahti is quite large (the seventh largest in Finland), innovation was still scarce and unco-ordinated. When the industrial sector suffered a blow in the 1990s, the region was lost and unaware of its own strengths. Lahti was considered too large and centrally located for traditional regional policy; moreover, the traditional innovation system model of large university regions was ineffective. In short, the region had no clear vision of its place or profile.

The “great turn”
For the region to develop, something had to change, and during the early 2000s a change started slowly. First came the realisation that the absence of a university and low R&D input were not necessarily a disadvantage. Instead, there was a chance to turn this weakness into a strength by using the region’s uniqueness. This provided the opportunity to create an entirely new way to implement university policy...
through network-like operating models, focusing specifically on research transfer, a key factor in this region. Collaboration between the City of Lahti and four universities (the University of Helsinki, Aalto University, Tampere University of Technology and Lappeenranta University of Technology) ensures tailored university expertise that focuses specifically on the needs of the region without fragmenting the university sector. It can be tailored precisely to the needs of current business life without requiring the entire university sector to change.

Then, a practice-based way of thinking was introduced. Instead of innovation stemming from research, attention was directed to an innovation model fed by the interaction between companies and users. The practice-based innovation model is characterised by market-led thinking, company-driven challenges as triggers of innovation and practice-based innovation tools. This was a perfect time to venture into a more practice-based system and take advantage of the review of Lahti’s innovation system.

The third revolutionary idea was a need for specialisation. Without a clear profile and focus, there is a risk that activities will become scattered and therefore ineffective.

Priority areas of expertise

Three lines of expertise were selected by the bodies in the Lahti region as priority areas of regional expertise: environment/clean tech, design and practice-based innovation.

Environment/Clean tech

The second most important environmental business centre in Finland operates in the Lahti region, and focuses on sustainable, environmentally efficient solutions and the recycling business, comprising utilisation of the energy content of waste. Major industries utilising environmental technology include mechatronics and the housing industry. The most important university-level research is conducted at the University of Helsinki’s Department of Environmental Sciences and Aalto University School of Engineering’s Lahti Centre. This expertise in the Lahti region is also supported by Tampere University of Technology and Lappeenranta University of Technology as well as Lahti University of Applied Sciences. Lahti Science and Business Park is a leading networking facilitator in the clean-tech sector in Finland co-ordinating the national clean-tech cluster operations.

Design

The Lahti region is one of the most important centres of design know-how in Finland, and it is the most efficient region in utilising industrial design. In recent years, many successful companies in the region have chosen design as a vital competitive factor. The Lahti region will promote itself in design and business as possessing the ability to make

Tomi Tura has since 2006 worked as Director of Regional Innovation System Development in Lahti Science and Business Park Ltd, one of the leading CleanTech science parks in Northern Europe. Before this, Tura worked at the University of Helsinki as Head of Development and as a researcher, specialising in regional innovation systems and the role of universities in regional development. He has also more than 10 years experience in managing large regional, national and international R&D and innovation projects.

In his current position, Tomi Tura has been responsible for the preparation of the major regional strategies and programmes for competitiveness and innovation, and has worked as a manager of the Regional Development Programme in the Lahti Region. Currently, Tura leads the New Ventures unit of Lahti Science and Business Park Ltd, and coordinates the European-level eco-innovation policy initiative, ECOPOL. He is also advising the City of Lahti on innovation and university policy issues.

Your can reach Tomi at tomi.tura@lahtisbp.fi
design a crucial factor enhancing companies’ competitiveness. The spear-head of higher education in design is the Institute of Design at Lahti University of Applied Sciences, which is at the apex in the field in Finland and is an internationally renowned school of industrial design.

**Practice-based innovation**

A special user-driven model of action for R&D and innovation has been developed in the Lahti region, one derived from the needs of companies. Its strengths and characteristics are fast application and commercialisation of ideas, and it is an efficient means to attract international expertise to support development. The companies in the region have successfully applied this model in their businesses. Lappeenranta University of Technology’s Lahti School of Innovation hosts a research team that is the leader in Finland in innovation environment research. The team has also participated in the practical testing and development of the model.

**Lahti region Competitiveness and Business Strategy 2009–2015**

From these circumstances and new discoveries, the Lahti region started to develop its Competitiveness and Business Strategy for 2009–2015. The three areas of expertise were combined in the same context for the first time. The strategy relies on understanding the wide scope of innovation and concentrates on practice-based innovation in particular, and the spear-heads of expertise serving all industries and clusters, namely environment, design and practice-based innovation. This model enabled the co-ordination of all the strategies, plans and bodies in the region.

Participating in the creation of this strategy was the City of Lahti, the Regional Council of Päijät-Häme, regional development companies, higher education institutions and local businesses.

**Collaboration of the areas of greatest expertise**

With the principles of practice-based innovation as its point of departure, Lahti is a pioneer in developing modern innovation systems. The regional bodies of Päijät-Häme are generating a new, international, high-quality network of R&D and innovation, a ‘meta-platform’ that will combine the three areas of expertise with the strong regional clusters and industries in a unique way. This will help to identify innovative business potential in areas and industries requiring cross-disciplined expertise. The framework of the platform is presented in Figure 1.
The development platform is based on five premises:

1. Companies, research institutions, development organisations and users form a platform and collaborate on a common issue, a so-called hot spot
2. Focus is on the phases of testing, piloting and prototyping
3. Creative combinations across borders of industries and sectors will be implemented in innovation
4. Actions are user-driven: the customer is a subject in the innovation process
5. Environmental expertise, design and innovation expertise will form a novel combination.

**Monitoring and evaluation**

A monitoring group consisting of representatives from local companies, the City of Lahti and other stakeholders evaluates the implementation of the strategy on a yearly basis. In addition, three boards consisting of major companies and other experts have been established to lead, monitor and evaluate each of the three areas of expertise. The board members have been selected to represent a variety of perspectives on the utilisation and development of the area of expertise. However, systematic monitoring and evaluation are tasks that are still undergoing development and improvement.
Practice before theory
The Lahti case provides an interesting example of a region working with Smart Specialisation even before the term was widely introduced. However, closer examination of the Lahti case makes it possible to identify variations in the six steps mentioned in the article "What is Smart Specialisation?" by Inger Midtkandal and Jens Sörvik. The process started with an analysis and evaluation of the regional situation and potential. A sound governance structure involving various stakeholders ensured that the process was rooted in each sector of the region. After that, three areas of expertise were prioritised and combined in a vision. A tool to realise the vision in practice was created with the development platform, and today the work is monitored and evaluated by a number of bodies.

The case of Lahti also indicates that even a region that is poor in R&D resources may show a high degree of innovativeness. Figure 2 shows the number of innovations in Finnish regions related to their added value in 1997–2007, showing Päijät-Häme among the most innovative regions in Finland despite its very low research input.

![Figure 2](image-url)
The Rapid Diffusion of a New Policy Concept

By Maria Lindqvist

When I first encountered Smart Specialisation, I could never have expected the rapid impact of the concept on European policy. Today, strategies for Smart Specialisation are being implemented in the Nordic countries to varying degrees, mainly in connection with the new EU Structural Funds.

Development of the concept

My first encounter with the concept of Smart Specialisation was in late 2010, when I received the template for writing a case study for the European Regional Innovation Monitor (RIM). One of the headings concerned Smart Specialisation, and the authors were expected to write about the implementation of the concept in relation to regional innovation. I expected this to be just another concept for describing collaborative development activities, in line with clusters, innovation ecosystems, triple helix and open innovation platforms. To some extent, this turned out to be true, but at that time, I could never have expected the extent and the speed at which the concept was implemented in European policy.

In October 2011, I participated in a RIM policy workshop on New Practices in Regional Innovation Policy - towards Regionally Adapted Strategies in Brussels. One of the presentations was based on the thematic paper Policies and Processes of Smart Specialisation: Realising New Opportunities prepared for the RIM project. At the workshop, there were representatives from the academic sector and regional authorities, as well as from DG Enterprise and DG Regio. During the discussion, it became increasingly clear to me that this was not only a new concept for collaboration, but also an important concept in European policy because as it was stated that Smart Specialisation was likely to become a precondition for the new structural funds programme in the period 2014–2020.

To understand the concept better, I read some of the relevant documents. This showed that Smart Specialisation was introduced in an article in 2009 (Foray et al, 2009) by academic experts supporting the work of the Knowledge for Growth (K4G) expert group on Science and Technology (S&T) policy. The surprisingly rapid implementation of the concept was later commented upon by the original authors in an article in 2011 (Foray et al, 2011).
“Smart Specialisation is a policy concept that has enjoyed a short but very exciting life! Elaborated by a group of academic “experts” in 2008, it very quickly made a significant impact on the policy audience, particularly in Europe. Such a success story in such a short period of time is a perfect example of “policy running ahead of theory”.

**Adapting to regional variation**

What is interesting to note is that the concept was developed in a context of S&T policy, and not as a concept for regional development. Therefore, the implement of this initially place-neutral concept into regional policy required some adaptation and further development. This was elaborated upon by other researchers, stressing the importance of variations in regional policy design, and the need for regional embeddedness, relatedness and connectivity (McCann and Ortega-Argilés, 2011).

To support regional policymakers in the process of developing what were defined as Research and Innovation Strategies for Smart Specialisation (RIS3) for implementation of the concept, the S3 Platform in Seville was developed. The Platform has played an important role in developing guidelines and increasing regional knowledge of the concept. Nonetheless, it has been stated that neither the original authors of the concept nor the Platform researchers have all the answers, but that the concept is still successively being developed in collaboration with academics and policymakers.

**Implementation in the Nordic countries**

Since early 2012, I have had the opportunity to participate in numerous activities concerning the future implementation of Smart Specialisation in Sweden. There has been great interest among regional actors, but also some concern about the requirement to develop RIS3 strategies for the new programme period of the EU Cohesion Policy. At what level must these strategies be developed? Considering the time-consuming process of following the six steps for developing RIS3, as presented by the S3 Platform in Seville, the question has been raised whether this is at all possible for regions within the frame of the new Operational Programmes. Skåne and Västra Götaland, two of the Swedish regions that have come closest to developing such strategies, started their processes even before Smart Specialisation was discussed.

In a meeting of a Nordic working group in March 2012, the concept of Smart Specialisation was presented and discussed. One question was if this was really a new policy stream or just another way to present what is already going on. As a result, a small study on the implementation of Smart Specialisation in the Nordic countries was initiated. The results indicate some variations between the Nordic countries concerning the impact of the concept on national and regional policy.
The EU member states have become more involved in the discussions as part of the preparation for the future European Regional Development Funds (ERDF). In Finland, there seems to be a trend towards increased concentration and specialisation of research and innovation activities, in line with Smart Specialisation, and some Finnish regions have become members of the S3 Platform to support the implementation of the concept. Sweden seems unwilling to adopt the concept formally at the national level and to demand that regions develop RIS3, but for some years, voluntary development of Regional Innovation Strategies (RIS) at the county level has been supported. Nevertheless, several Swedish regions have initiated processes in line with Smart Specialisation and some have taken an active part in the S3 Platform. In Denmark, there seems to be some scepticism regarding the concept at the national as well as regional levels. The argument is that it seems more efficient to support entrepreneurship and innovation in general than to concentrate on specific economic sectors. The non-member states, Iceland and Norway, have also started to approach the concept, even if it is not yet widespread.

However, although the concept is new, many Nordic regions seem to be doing well from a Smart Specialisation perspective. There have been many programmes and initiatives for regional development and innovation with components that may support the future implementation of RIS3. These include:

- Regional embeddedness — in most regions, analysis of potentials within the regional context has been conducted as an input for various regional strategies, often based on traditional SWOT analysis (Strengths, Weaknesses, Opportunities and Threats).

- Co-operative governance — there is a strong tradition of developing regional programmes or strategies for development, clusters or innovation, combining strategic leadership with stakeholder involvement, often from a triple helix perspective.

- Avoiding lock-in effects — cross-sector and transdisciplinary collaboration has been addressed, specifically in some of the national cluster and innovation programmes.

- A broadly defined concept of innovation — most Nordic countries have introduced policy measures to support various types of innovation, including user-driven innovations, public sector innovation and green innovation.

**Concluding reflections**

There is increasing interest in Smart Specialisation in the Nordic countries, particularly among actors responsible for implementation of the new Cohesion Policy at the regional and national levels in the
EU member states. However, the review of the Nordic countries indicates that the level of formal implementation is still limited. One argument is that it may be confusing to introduce a new policy concept in addition to Smart Growth, which is already a part of the Europe 2020 strategy and is considered less controversial. Another argument is that the development of RIS3, using the six-step model, takes too much time to be integrated into the new Operational Programmes for the ERDF. A third argument is that many Nordic regions have already implemented many of the elements of Smart Specialisation in their strategies and policy measures.

However, the overall ambitions of Smart Specialisation are positive and there seems to be room to implement further some of the elements suggested to generate more efficient regional and national development and innovation strategies in the Nordic countries. One example concerns the regional capacity for analysis of economic potential in relation to other regions, within or outside the country. Another example concerns the need to provide incentives for increased involvement of small and medium-sized companies (SMEs), entrepreneurs and representatives of the general public (quadruple helix). There is also room for improved dialogue between levels and for participation of SMEs in global value chains and EU research programmes, such as Horizon 2020.

**Literature to The Rapid Diffusion of a New Policy Concept**


Foray, D., P.A. David & B. Hall (2009), *Smart Specialization – The Concept*, Knowledge Economists Policy Brief no 9, from the Knowledge for Growth Expert Group
